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public power

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public power

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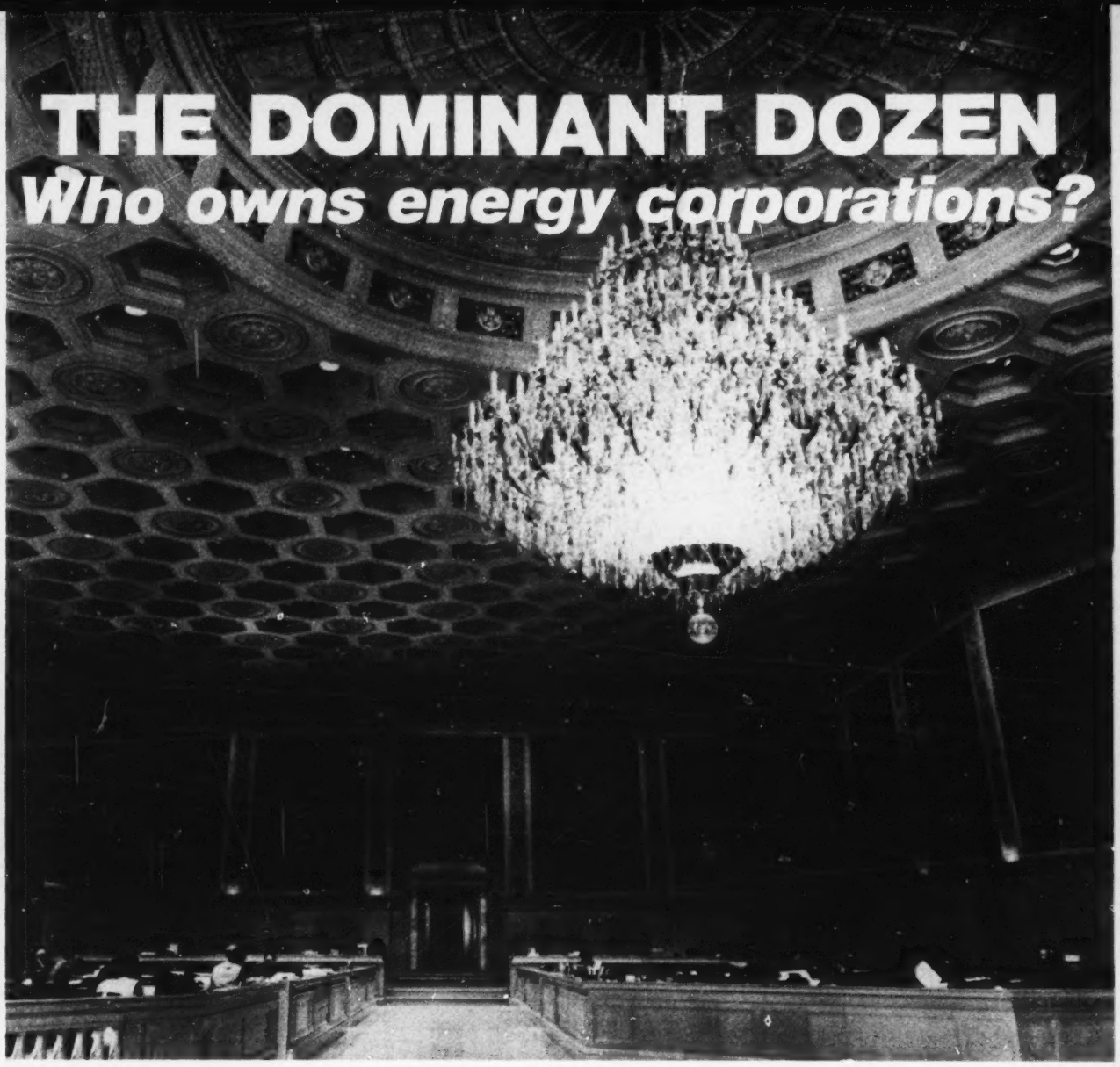
THE DOMINANT DOZEN

Who owns energy corporations?



Control of stock in energy corporations is especially concentrated in 12 institutions. Six of them are banks, such as J.P. Morgan and Co., whose opulence is reflected in this 1,900-piece chandelier in its Wall Street headquarters. Other dominant investors identified in this article include four which are not well-known.—Photo by Allen Green, New York Convention and Visitors Bureau

by VIC REINEMER *Editor,* PUBLIC POWER

NOTHING DIFFERENTIATES PUBLIC and private energy systems more than the matter of where ultimate ownership and control reside.

The 2,200-plus local publicly owned electric utilities which comprise the public power sector are owned by city, town and district governments. Citizen customers have equal votes in deciding who sits on the utility governing boards, or who appoints them.

In contrast, private utilities and other investor-owned energy corporations are responsible to investors. Their interests are quite different from those of the customers who, in public power systems, hold the ultimate control. And the number of investors in a position to influence or control an energy corporation is very, very small.

What constitutes control, or potential control, of the large investor-owned systems? Two eminent authorities often cited are former Federal Reserve Board Chairman Arthur Burns and the late Rep. Wright Patman, who as chairman of the House Banking and Currency Committee was often at loggerheads with Burns. They disagreed on many things but agreed that control of a widely held corporation could often be exercised with less than 5 percent of the voting stock.

How is this so? Five percent of the stock in a corporation with, say, 100 million voting shares, is five million votes. That is frequently several thousand times more than the average stockholding in a large corporation. Large stockholders—usually institutional investors such as banks, insurance companies or investment company (mutual fund) complexes—can arrange representation on the boards of directors. This is especially easy if the corporation permits cumulative voting; all the votes can be cast for one candidate for the board and multiplied by the number of board positions to be filled.

These levers of control—voting power and board representation—can be supplemented by business arrangements, between the investor and the corporation, which provide additional leverage. These arrangements may be loans, with restrictions on the company and favors for the lender written into the agreement; administration of employee stock plans, which provides additional voting authority; or negotiated contracts for services that might be obtained more economically on a competitive bid basis.

Perhaps more significantly, corporate managers are most solicitous of the views and desires of their largest investors. Corporate management dreads the thought that a large investor might abruptly sell its holdings in the corporation, precipitating a run on the stock and a drop in its price.

The control by principal energy corporations of the lions' share of oil, coal, gas and uranium reserves, and the means of producing energy from them, is well-documented. So is their growing share of solar technology. They own almost two-thirds of the domestic copper required by solar collectors. Only two of them—Atlantic Richfield Co. and Exxon Corp.—own half of the photovoltaic cell industry.

But—try to peer up another level, to ascertain control and influence within the major energy corporations, and vision fades. The records on such matters in government regulatory offices are scant—and misleading. Usually articulate officials of large corporations and institutional investors hedge or mumble when specific questions about control and voting are asked. The corporations prefer to deal with the subject through press releases, television commercials, or newspaper and magazine ads which suggest that the companies are owned by millions of hard hats, pensioners and working women.

Directory Lists Key Investors

There now is, however, solid and noteworthy data regarding ownership and control of energy corporations. A stock ownership directory published recently* illuminates these pyramids of power as never before. The directory profiles the ownership of 131 of the largest U.S. energy corporations, whose combined revenues total about half a trillion dollars annually; the 10 largest take in about half of that revenue.

The directory was prepared by Corporate Data Exchange (CDE), a nonprofit research organization, five years old, which has identified corporate relationships for congressional committees, labor unions, corporations and the press. CDE's methodology was to collect, evaluate and tabulate literally hundreds of reports filed in 1979 which show who is empowered to vote, buy and sell stock. CDE also identified some of the other business relationships among major investors and the corporations in their investment portfolio.

Here are the principal findings:

- In the 38 major energy corporations, the top 20 stockholders control, on the average, 32 percent of the corporations' stock; the top five stockholders 21 percent. (Table 1)

TABLE I:

Stock Ownership Concentration of the 38 Major Energy Corporations

	Company Rank in:					% Stock Managed by Top:		Total Stock Managers Identified:		
Energy Company	Coal Prod.*	Petrol. Refin.	Gas Prod.	Gas Dist.	Uran. Milled	5	20	Number	Stock Held(%)	Number of Stockholders of Record
Amax	3	—	—	—	—	35	48	38	54	26,709
Amerada Hess	—	9	—	—	—	35	51	36	57	30,341
American Natl. Res.	—	—	—	9	—	12	24	61	38	49,576
Ashland Oil	7	15	25	—	—	13	22	23	22	61,278
Atlantic Richfield	—	8	7	—	3	12	26	69	45	196,150
Bethlehem Steel	10	—	—	—	—	12	20	31	22	161,000
Columbia Gas Sys.	—	—	21	6	—	14	21	25	22	157,139
Conoco	2	16	14	—	6	14	27	65	43	70,588
Consol. Natl. Gas	—	—	—	10	—	19	25	21	25	70,204
El Paso	—	—	—	2	—	15	26	28	28	113,872
Exxon	31	1	1	—	5	9	19	61	31	693,176
General Electric	19	—	—	—	4	9	21	67	35	543,000
Getty Oil	—	17	16	—	10	64	71	32	73	19,947
Gulf Oil	16	6	9	—	—	24	31	35	35	357,061
Kerr-McGee	—	19	20	—	1	14	36	56	48	19,100
Mobil	—	7	4	—	—	13	25	51	34	267,995
Northern Natural Gas	—	—	—	8	—	18	33	56	45	31,431
Occidental Petroleum	4	—	—	—	—	8	13	21	14	162,769
Panhandle Eastern	—	—	27	4	—	20	41	56	54	21,274
Penn Virginia	9	—	—	—	—	41	55	20	55	1,675
Peoples Gas	—	—	—	5	—	7	18	36	22	62,424
Phelps Dodge	—	—	—	—	8	13	24	34	29	42,861
Phillips Petroleum	—	12	10	—	—	14	25	67	41	122,624
Pittston	5	—	—	—	—	17	29	38	36	21,884
Shell Oil	32	3	2	—	—	81	85	16	85	34,789
Standard Oil (Cal.)	—	26	—	—	—	16	24	47	32	263,336
Standard Oil (Ind.)	—	4	5	—	—	14	26	59	38	173,211
Standard Oil (Ohio)	13	14	—	—	9	59	67	28	69	41,297
Sun Co.	45	10	12	—	—	51	55	14	55	73,883
Tenneco	—	24	13	1	—	12	22	50	30	231,600
Texaco	—	5	3	—	—	9	16	40	21	431,562
Texas Eastern	—	—	—	3	—	17	32	45	39	52,337
Texas Utilities	8	—	—	—	—	14	28	84	53	59,900
UNC Resources	—	—	—	—	2	25	36	18	36	17,300
Union Carbide	—	—	—	—	7	8	18	51	26	176,079
Union Oil of Cal.	—	13	8	—	—	13	24	50	34	84,996
United Energy Res.	—	—	—	7	—	20	26	21	27	39,498
United States Steel	6	—	—	—	—	20	27	25	28	258,239
Averages for All 38 Companies						21%	32%	41	39%	
								Total Stockholders		5,241,095
Top 10's Market Share	35%	63%	56%	55%	94%					

*The largest coal producer, Peabody Holding Co., is privately held and therefore does not appear in this table.

* *CDE STOCK OWNERSHIP DIRECTORY, IV-ENERGY, published by Corporate Data Exchange, Inc., Room 707, 198 Broadway, New York, N.Y. 10038. Its three preceding stock ownership directories profiled transportation, agribusiness and financial corporations.*

• These principal investors are usually from among 52 firms. Within the 52 are a dozen dominant investors, including one family group. (Table II)

• In 53 of the energy firms in the study (the principal petroleum, coal mining, natural gas, electric utility and nuclear-related companies) at least one stockholder controls 5 percent or more of the corporation's stock. (Table III)

• Pension and employee funds are invested heavily in key energy corporations. However, most of these pension funds are controlled by relatively few large institutional investors, rather than the pensioners or workers, many of whom are employed by local and state governments. Similarly, the large institutions control through trust arrangements much of the stock which individuals have invested.

(The causes of economic concentration and its effect on public power systems and the government are discussed in the editorial column, "The Other Side" on the back page of this issue.)

TABLE II: The 52 Largest Institutional Investors in the Energy Industry

Investor	Number of Companies in Which Investor Controls 1% or More of the Stock		
	131 Profiled Companies	38 Major Companies	93 Other Companies
TIAA-CREF	31	8	23
Morgan, J P & Co.	30	14	16
Prudential Insurance	26	9	17
Citicorp	23	10	13
Capital Group	23	8	15
Bankers Trust New York	21	10	11
IDS Group	18	7	11
Chase Manhattan	16	9	7
Manufacturers Hanover	15	9	6
Lord Abbett & Co.	15	8	7
Du Pont Family Interests	15	5	10
AmeriTrust	12	4	8
Harris Bankcorp	11	3	8
United States Steel	11	2	9
Marsh & McClennan	10	1	9
State Farm Mutual Auto Ins.	10	1	9
Chemical New York	9	3	6
Dreyfus Corp.	9	3	6
FMR Corp.	9	3	6
First National Boston	9	3	6
Massachussetts Financial Serv.	9	3	6
Mellon National	9	5	4
Pioneer Western	9	3	6
Sarofim (Fayez) & Co.	9	3	6
Bank of New York	8	5	3
First Bank System	8	1	7
First Chicago	8	4	4
Ford Foundation	8	2	6
Lazard Freres	8	2	6
National Detroit	8	3	5
Rowe Price (T.) & Assoc.	8	1	7
Sears Roebuck	8	1	7
Seligman (J & W) & Co.	8	2	6
California, University of	7	—	7
Cal. Pub. Emps. & Teach. Retir.	7	4	3
Equitable Life Assur.	7	2	5
Metropolitan Life Ins.	7	2	5
Stein Roe & Farnham	7	1	6
Batterymarch Financial Mngt.	6	1	5
First Union Bancorp	6	—	6
Robeco (Holland)	6	2	4
Scudder Stevens & Clark	6	3	3
Wellington Management	6	2	4
Continental Corp.	5	2	3
Donaldson Lufkin & Jenrette	5	—	5
Minnesota State Board of Inv.	5	2	3
Northern Trust	5	2	3
National City Corp.	5	1	4
Oppenheimer & Co.	5	1	4
Republic of Texas	5	1	4
State Street Research & Mngt.	5	1	4
Wells Fargo	5	3	2

Ad Tells Different Story

The difference between what some energy corporations say about their ownership, and the facts as assembled by CDE, can easily be shown by the example of Standard Oil of Indiana. It has recently run in dozens of publications the ad, reproduced here, "Who really owns Standard Oil (Indiana)?" The ad speaks of the 21,215 institutions, 154,869 individuals and many company employees who "own" the company. (See facing page.)

Part of CDE's report on the same corporation is also reprinted there. CDE ranked 59 investors who control 38.24 percent of the corporation's stock. The top 20 control more than a fourth of all the stock. The top five control about 14 percent of it. Thus the ad would be more accurate were the pictures of junior, grandma and the rest replaced by a group shot of the chief executive officers of First Chicago Corp., Citicorp, Harris Bankcorp, Chase Manhattan Corp. and the Prudential Insurance Co.

CDE's findings need to be qualified in three ways:

(1) A corporation's employee savings plan—such as Standard Oil of Indiana's—is often managed by a financial institution, in this illustrative case First Chicago Corp. The employees have the right to instruct the bank how to vote their shares. Many of them do not bother to do this. If the employees do not instruct the bank how to vote at least 10 days before the annual meeting the bank votes the shares, in favor of the candidates and propositions recommended by management.

CDE credits control of stock in such arrangements to the bank. The option of employees described above tends to diminish the reported stock concentration ratio, but probably not by very much. Of those employees who do give voting instructions only a few are likely to record themselves against management, which almost always has enough votes to win overwhelmingly regardless

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Who really owns Standard Oil (Indiana)?
62.95%
21,215 institutions, including insurance companies, retirement plans, colleges, estates, trusts, charities, foundations, banks, religious and fraternal organizations, etc.
29.59%
154,869 individuals
7.46%
Standard Oil (Indiana) employee savings plans.
Maybe you do. Maybe you participate in the company profits and don't know it.
If you are in a pension plan, or a union—or own an insurance policy, or invest in mutual funds—there's a good chance you have an interest in this company. Many Americans own its stock indirectly. In fact, about 63% of the company is owned by 21,000 separate institutions that represent millions of people. People like you who want their money to grow for their retirement and other future needs.
Plus that, about 155,000 private individuals own nearly 30% of its stock directly. And employees own more than 7% of the company stock through the company savings plans.
It's easy to picture an oil company as greedy and impersonal. But that image fades fast when you understand that it is millions of individuals like you who really own it. It is people who own the refineries, the pipelines, the tank trucks. It is people who risk their money on exploring for energy and drilling the wells that may or may not pay off. This is free enterprise.
Broad ownership through shareholding is something we can all be thankful for. Because it's shareholders who help provide the funds we continue to invest in America. To find the energy it needs. To help reduce America's dangerous dependence on foreign oil. And to strengthen America's economy so that people everywhere can prosper.
We feel that this investment in American energy is the best we can make. For America. For you. And for the millions of people like you who are the real owners.
America runs better on American oil.
Standard Oil Company (Indiana)

of the issue. First Chicago Corp. refuses to disclose how many Standard Oil of Indiana shares it voted this year without instructions from employee-stockholders.

(2) Stock controlled by an individual generally is not reported publicly unless the person is (a) an officer or director of a publicly held company; (b) a member of an officer's or director's family, or (c) controls more than 5 percent of the corporation's outstanding shares. Some significant stockholdings by individuals, or by institutions which are not subject to or have not complied with government reporting requirements, may not be included in the directory. However, the stock holdings of large institutional investors are so large that they tower over, as far as can be determined, the holdings of all individuals and families except the du Ponts, Rockefellers, Hunts and Rothschilds.

(3) Some of the biggest energy corporations escaped CDE's definition of major energy corporations and are not included in this study. These are the "railroads"—the Burlington Northern (BN) and Union Pacific Corp. These two energy-real estate conglomerates and Continental Oil Co. (which was profiled by CDE) each control more than 10 billion tons of economically recoverable coal reserves.

The BN's Sideline

The BN's coal reserves—some 60 billion tons—dwarf those of other energy corporations. The BN also has oil and gas rights to 7.5 million acres in 13 states, 1.5 million acres of timberland,

Standard Oil of Indiana's 1980 ads regarding its tens of thousands of "owners" contrast sharply with Corporate Data Exchange Inc.'s finding that five stockholders control 14 percent of the oil company's stock and 20 stockholders control more than 25 percent.

PRINCIPAL STOCKHOLDERS	MANAGED HOLDINGS: Investment Authority: Number of Shares	% of Total	Voting Power
1. First Chicago Corp<	12,745,676	8.71	12,599,277
Standard Oil Indiana Savings Plan/32429			
Pcts (11161543)			
2. Citicorp<	2,084,418	1.42	1,115,330
3. Harris Bankcorp Inc	1,887,000	1.29	432,000
4. Chase Manhattan Corp	1,839,931	1.26	1,685,301
5. Prudential Insurance Co of Am	1,800,500	1.23	1,800,500
6. National Detroit Corp	1,673,135	1.14	1,533,507
7. Mudd Family Interests	1,422,083L	.96	1,422,083L
Mudd, Henry T & Assoc (579284)			
Mudd, Seeley W 2nd & Family (572867)			
Sprague, Norman F & Assoc (269932)			
8. TIAA-CREF	1,364,000	.92	1,364,000
College Retirement Equities Fund (1300000)			
Teachers Insurance & Annuity Assn (64000)			
9. Manufacturers Hanover Corp<	1,293,477	.87	370,330
10. Sarofim (Fayez) & Co	1,281,600	.87	1,281,600
11. Rockefeller Family Interests	1,252,072	.85	1,252,072
Rockefeller Foundation (1001900)			
Rockefeller University (98520)			
Descendants of John D Jr (154652)			
12. California Public Emps & Teachers Retir Sys	1,179,600L	.80	1,179,600L
13. Kirby Family Group-Allegheny Corp<	1,077,000	.73	995,500
Investors Diversified Ser Inc* (304200)			
IDS Funds-Combined (772800)			
14. Mercantile Bancorporation Inc	1,073,203	.72	1,073,203
15. Bank of New York Co Inc	936,519	.63	849,019
16. Wells Fargo & Co	931,212	.63	931,212
17. First Bank System Inc	925,497	.62	843,867
18. Northern Trust Corp	915,088	.62	829,457
19. Bankers Trust New York Corp			

STANDARD OIL (IN)

200 E. Randolph Dr., Chicago, IL 60601
(312) 856-3800

Business Lines	Percent Op Rev	Percent Income
Petr Expl & Production	29%	86%
Petr Ref, Trans, Market	80	13
Chemicals	11	3
Other	1	6
TOTAL ($ millions)	$16,350	$2,768a

Stock Class	Shares (000's)	Votes/ Share	Votes (000's)	Holders of Record
Common	146,326	1	146,236	179,211
TOTAL VOTES (000'S)			146,326	

Counsel/Wash Rep	Ser?	Fee (000)	Year
O'Melveny & Myers, CA	SC	na	'79
Hamel, Park, McCabe, DC	WR	na	'78
Mann, Larsen, DC	WR	na	'78

Accountant

Price, Waterhouse & Co, NY

TABLE III: Managers of 5% of More of Stock in Energy Corporations

Corporation	*Manager (%)* — *# indicates interlocking directorate.*
Allied Chemical	Textron Inc. (5.08)
Amax	Standard Oil of Cal. (19.32) Selection Trust Ltd. (Eng) (7.51)
Amerada Hess	Hess Family Interests #(20.94) Prudential Insurance (5.06)
American Petrofina	Petrofina S A (Belg.) (72.10)
Armco	Capital Group (7.92)
Ashland Oil	Chemical New York (7.26)
Atlas Corp.	Hughes, Howard & Jr. Estate (7.16) Pioneer Corp. (Texas) (5.82)
Borg-Warner	Bosch (Rob) Gmbh (W. Ger.) (9.98)
CBI Industries	Horton Family Interests# (6.90) Trees, Geo. S. & Family# (5.55)
Cities Service	Bancoklahoma Corp. (8.73)
Coastal States Gas	Wyatt, O. S. Jr. & Family II (9.53) Continental Illinois (7.68) Mercantile Texas Corp. (5.44)
Conoco	Bankers Trust New York (5.15)
Duke Power	Duke Family Interests# (20.84)
Du Pont (E.I.) de Nemours	Du Pont Family Interests# (27.31)
Eastern Gas & Fuel Associates	Bankers Trust New York (5.56) Bank of New York (5.08)
Entex	State Farm Mutual Auto Ins. (9.01)
General Dynamics	Crown Family Interests# (20.36) Bankers Trust New York (7.67) Morgan, J. P. & Co. (5.32)
Getty Oil	Getty Family Interests# (58.16)
Gulf Oil	Mellon Family Interests# (18.00)
Gulf Resources & Chemical	Hunt Family Group (8.24)
Mobil	Bankers Trust New York (6.39)
Montana-Dakota Utilities	Forester-Orr Family Interests# (5.04)
National Steel	Pittsburgh National Corp (15.52) Hanna Mining Co. (5.73)
Niagara Mohawk Power	Hong Kong and Shanghai Banking (5.35)
North American Coal	Taplin-Rankim Family Int# (34.64) National City Corp. (12.70)
Northern Natural Gas	Omaha National Corp. (6.91)
Oklahoma Natural Gas	Bancoklahoma Corp. (8.81)
Pacific Gas & Electric	Rothschild Fam. Group (Fr.-Eng.) (6.30)
Panhandle Eastern Pipeline	State Street Research & Mngt. (6.66)
Penn Virginia	Leisenring-Wentz Fam. Int.# (14.09) Fidelcor (12.39) Morgan, J.P. & Co. (6.17)
Pennzoil	Sarofim (Fayez) & Co. (6.91)
Phillips Petroleum	First Natl. Bk. in Bartlesville (6.92)
Pioneer Corp (Texas)	Prudential Insurance (5.87)
Pittston	Morgan, J.P. & Co. (7.71)
Pogo Producing	State Farm Mutual Auto Ins. (7.52)
Republic Steel	Capital Group (6.07) Lord Abbett & Co. (5.85)
Rochester & Pittsburgh Coal	Iselin Family Interests# (46.29)
Shell Oil	Royal Dutch/Shell Group (70.16) Shell Oil (7.37)
Southern Union	First International Bancshares (6.42) First Bank System (5.92)
Standard Oil (Ind)	First Chicago (8.71)
Standard Oil (Ohio)	British Petroleum Ltd. (Eng.) (52.16)
Stone & Webster	Kramer, W.J., Whisnand, R. Jr. & Assoc. (6.37)
Struthers Wells	Finkelstein Fam. & Affiliates# (16.14) Wallace, John C. Fam. & Assoc# (6.84)
Sun Co.	Pew Family Interests# (32.44) Thompson, B.R. Fam & Assoc. (8.53) Philadelphia National Corp. (5.88)
Superior Oil	Keck Family Interests# (29.88) Union Bancorp (8.91)
Texaco	Manufacturers Hanover (5.21)
Texas Eastern	Sarofim (Fayez) & Co. (6.02)
Texas Gas Transmission	Bankers Trust New York (5.47)
Transco Cos	First City Bancorp of Texas (7.92)
UNC Resources	Hunt Family Group (7.12) Morgan, J.P. & Co. (6.48) BEA Associates (5.90)
Union Oil of California	Security Pacific (6.37)
United Energy Resources	Hunt Family Group (6.00)
United States Steel	United States Steel (13.21)

more than a million acres in grazing and farm land, and a railroad network extending from the Pacific to the Gulf of Mexico to the Great Lakes.

The federal government generously granted vast natural resources to the BN as an incentive to build a railroad. The BN sidelined rail passenger service to concentrate on developing those lucrative resources. It is trying to abandon intrastate freight service. Interstate freight service continues, as public power systems in Texas which are fighting the BN's hefty, multiple rate increases are keenly aware. (See "The

Major IOU Stockholders

THE PRINCIPAL STOCKHOLDERS in three major investor-owned utilities are foreign. The Rothschild family group of France and England, through its Bank of California, controls more than 6 percent of the stock in Pacific Gas & Electric, the nation's largest IOU. Hong Kong and Shanghai Banking controls Marine Midland Bank, which manages more than 5 percent of the stock in Niagara Mohawk Power Corp. FORBES reported in its Oct. 13 issue that more than one sixth of Montana Power's stock is now held by Canadian investors which, Montana Power says, are pension funds.

Stock control of IOUs is most highly concentrated in Duke Power Co.; Duke family interests control more than 20 percent. Other private utilities—among the 38 profiled by CDE—in which the top five stockholders control more than 10 percent of the stock are Carolina Power & Light, Central & Southwest, Cincinnati Gas & Electric, Cleveland Electric Illuminating, Florida Power, Florida Power & Light, Middle South Utilities, Public Service of Colorado, Texas Utilities and Wisconsin Electric Power.

The University of California and the du Pont family are both among the five top stockholders in six IOUs and the top stockholder in two. Prudential Insurance is also the top stockholder in two IOUs and among the top five in eight of them.

Private utilities in which control is least concentrated among the 38 companies—principally because large institutional investors do not invest heavily in them—are American Electric Power, Consolidated Edison, Detroit Edison, Long Island Lighting, Northeast Utilities, Pacific Power & Light and Philadelphia Electric.

Coal Rate Crunch," by Michael Loftus, PUBLIC POWER, November-December 1979, p. 53.)

Increasing oil prices are good news for the BN's principal stockholders—J.P. Morgan & Co., Pacific Power and Light (PP&L) and Peter Kiewit Sons Inc. (PP&L and Peter Kiewit Sons' Inc. jointly own Decker Coal Co., whose subsidiary Westana is the record owner of the BN stock.) As the price of oil increases the proportion of coal reserves which can be mined economically increases. The BN *increased* its estimate of economically recoverable coal from 12 billion tons in 1978 to 14.7 billion tons—up 2.7 *billion* tons—last year. During the same period its proven oil reserves grew 18 percent and natural gas reserves increased 28 percent. Nevertheless for accounting purposes, during the same one-year interval, the BN *decreased* the book value of its identifiable coal and minerals, from $3.1 *million* to $2.7 *million*.

12 Key Energy Investors

Which are the few firms that control sizeable blocks of stock in major energy corporations? Are they subject to any control and guidance from the people who invest in or through them?

The dozen major investors at the top of Table II each control one percent or more of the stock in from 12 to 31 major energy corporations; each of the 12 is also among the five largest stockholders in from 10 to 33 major energy corporations. The majority of these 12 major investors are also principal creditors of energy corporations. And there are numerous interlocks among the boards of directors.

These 12 dominant investors include six commercial banks, two insurance companies, three investment company (mutual fund) complexes, and one family group, the du Ponts. The 11 institutional investors are:

INVESTMENT COMPANIES

Capital Group, Inc.
Lord Abbett & Co.
IDS

INSURANCE COMPANIES

TIAA-CREF
Prudential

BANKS

J.P. Morgan & Co.
Citicorp
Bankers Trust Co. New York
Chase Manhattan Corp.
Manufacturers Hanover Corp.
AmeriTrust Corp. (formerly Clevetrust Corp.)

Mutual Funds

Some of these firms are hardly household words. Capital Group Inc., based in Los Angeles, is one example. Privately held, it does not report to the Securities and Exchange Commission. Neither it nor its subsidiary Capital Research & Management are listed in "Standard & Poor's Register," "Moody's Bank & Finance Manual" or the "Directory of Corporate Affiliations."

The principal affiliates of Capital Group, Inc. are listed on newspaper financial pages under "American Funds" in the mutual fund quotations. Capital Group's principal owner is Jonathan Bell Lovelace, Jr., son of the fund family's founder.

Lord Abbett & Co. is an investment management firm in New York owned by eight partners. On Oct. 1 Alvin H. Berndt replaced Robert S. Driscoll as managing partner.

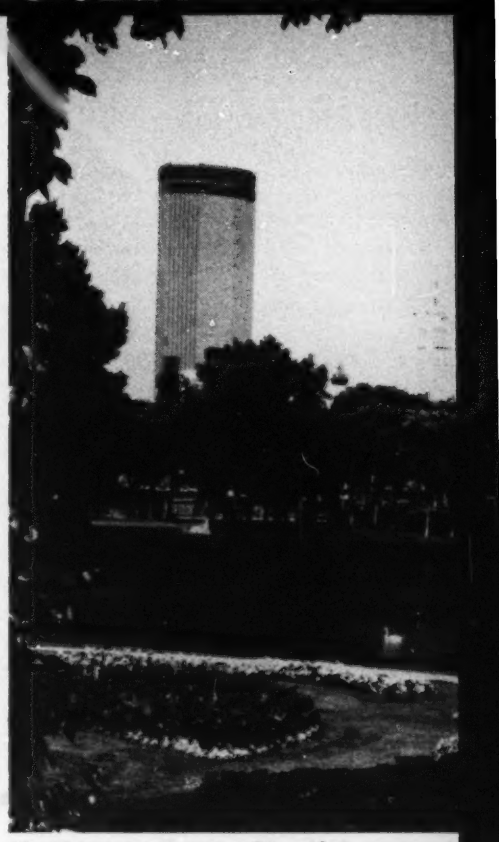
IDS (Investors Diversified Services), whose tower dominates the Minneapolis skyline, is the largest mutual fund complex in the world. IDS is a subsidiary of the New York-based Alleghany Corp., a conglomerate controlled by the Kirby family. Alleghany Board Chairman F.M. Kirby emphasizes that the mutual funds in the IDS group are— and this is typical—"separate, publicly-owned companies, which elect their own independent boards of directors."

Elections Preordained

"Elect" is the key word in Kirby's statement. Election results at annual meetings of mutual funds and other major investor-owned corporations are as preordained as in the Soviet Union, inasmuch as the Soviet and corporate ballots are strikingly similar—there is only one candidate for each position.

The key process, of course, is not election, but *nomination*. Service in or aspiration to high political office, and close ties with large energy corporations, are characteristic attributes of persons nominated and elected as outside directors of IDS funds.

Richard Nixon served on four of the fund boards from 1964 to 1968, the year he became president. (He and George E. MacKinnon, then vice president and general counsel of the largest IDS fund, Investors Mutual, had been freshman congressmen together.) Nixon was replaced in 1968 by his friend Donald Kendall, chief executive officer of Pepsico. Kendall also sits on the board of Atlantic Richfield; the IDS



The 57-story IDS *(Investors Diversified Services) Tower appropriately dominates the Minneapolis skyline. The largest mutual fund complex in the world, politically potent* IDS *is among the top 12 energy investors.*

group is one of its five major stockholders. Kendall still serves on IDS fund boards of directors with Melvin Laird, former congressman who was Nixon's secretary of defense and is a member of the board of directors of Phillips Petroleum, in which IDS funds are heavily invested.

John Byrnes, who was ranking minority member of the House Ways and Means Committee when he served in Congress, is a member of several of the IDS fund boards. Paul McCracken, chairman of the Council of Economic Advisers in the Nixon administration, sat on the boards of six of the funds until last year. Board chairman of all the IDS funds is Hamer Budge. Also a former congressman, he went straight to IDS from the job of regulating mutual funds as chairman of the Securities and Exchange Commission, to which Nixon had appointed him.

Insurance Companies

The acronym TIAA-CREF stands for Teachers Insurance and Annuity Association—College Retirement Equities Fund. Its assets, including more than $5 billion in stock, constitute the retirement and insurance plans of more than half a million professors and other employees of some 3,300 colleges, universities and nonprofit educational and re-

search organizations.

TIAA-CREF's procedures in deciding how to vote and invest its vast blocks of stock are a far cry from a city council meeting, but more democratic than those of other major managers of other people's money. One-fifth of the trustees are selected by policyholders. While TIAA-CREF occasionally differs with the management of some corporations in which it invests, it does not cast its votes against management on energy policy. The non-elected trustees of TIAA-CREF, who outnumber the elected trustees four to one, include Exxon's chairman, William Garvin. He replaced Atlantic Richfield's chairman, Robert Anderson, on the TIAA-CREF board in 1978.

Newark-based Prudential—whose chairman and chief executive officer is Robert A. Beck—is the largest of the mutual insurance companies, which theoretically are owned by their policyholders. In practice, however, policyholders have fewer rights than stockholders of investor-owned corporations.

Many mutual insurance policyholders are never notified of annual meetings. If a Prudential policyholder wants to nominate someone for the board of directors he has to present a supporting petition with more than 10,000 signatures of other policyholders. However—Catch 22—the list of policyholders is not available until 40 days before an election, and the nomination has to be filed at least five months before the election.

Commercial Banks

And who controls the one Cleveland and five New York commercial banks—the dominant group within the 12 principal investors in energy corporations?

Put most simply, the major banks control themselves and each other. A CDE directory of bank and finance corporations also published this year confirmed and expanded upon this finding by two congressional committees. The bank and finance directory, based on 1979 data, shows that:

- AmeriTrust Corp. (formerly Clevetrust Corp.) is an extraordinarily concentrated center of financial power. The bank controls itself by managing more than 26 percent of its own stock. The second largest block of stock is controlled by National City Corp. of Cleveland, also a multibank holding company. Its subsidiaries include National City Bank of Cleveland. National City Corp. is also the top stockholder in Cleveland Electric Illuminating Co. (CEI) and administers CEI's employee savings plan.

PUBLIC POWER readers will recall the long efforts of Cleveland banks, led by M. Brock Weir, now chairman and chief executive officer of the new AmeriTrust Corp., to abolish the feisty public power system in Cleveland which competes with the banks' favored CEI. (See "Cleveland's Muni Light—A Survivor," by Robert H. Holden, March-April 1980, p. 48, and "Cleveland Strikes A Blow for Public Power," by Arthur Dimond, March-April 1979, p. 14.)

- Two of the five New York banks, Chase Manhattan Corp. and Citicorp, together control more than five percent of the stock of one of the other five, J.P. Morgan and Co. Along with T. Rowe Price & Associates(*) and two other banks, First National Boston Corp. and National Detroit Corp. they control more than 13 percent of Morgan's stock. The top 20 investors in Morgan control more than 27 percent of Morgan's stock. Most of the top 20 are banks—including Morgan itself—or insurance companies; IDS and the University of California are exceptions.
- The top five stockholders in Citicorp, with 11.53 percent of the votes, remarkably resemble the five top stockholders of J.P. Morgan & Co. The largest is Morgan, which controls more than 4 percent of the votes in its competitor Citicorp. The other four are First National Boston Corp. (again), T. Rowe Price & Associates Inc. (again), TIAA-CREF and Citicorp itself.
- Bankers Trust New York Corp. controls 7.24 percent of its own stock, which is more than seven times as much as its second largest stockholder, Morgan. More than five percent of the stock in Chase Manhattan Corp. is controlled by the bank itself and the Rockefeller family interests. Bankers Trust is the next largest stockholder. Others which control more than 1 percent of the stock are the IDS mutual fund group, California and Ohio public employees' retirement systems and FMR Corp.

FMR, like Capital Group Inc., is an investment company complex (the "Fidelity Group" in the mutual fund quotations) controlled by the son of another fund pioneer. President of 10 of the funds and board chairman of 11, Edward Crosby Johnson 3rd nevertheless is not listed in "Who's Who in America" or "Who's Who in Finance and Industry." (Both publications, incidentally, are subsidiaries of ITT, in which the Fidelity funds control more than half a million shares.)

- Manufacturers Hanover controls more than 7 percent of its own stock. Morgan and Citicorp together control more than five percent. Another of the top five stockholders in Manufacturers Hanover is Continental Corp., an insurance company in which Manufacturers Hanover is the principal stockholder. (Turnabout is fair play.) The next largest stockholders in Manufacturers Hanover, with more than 5 percent among them, are the IDS fund group (again), Ameritrust (again), and Bankers Trust New York Corp. (again). And so it goes.

Concentration Blithely Unnoticed

Ownership means control, according to my dictionary. Control of the energy corporations bears little resemblance to the image the industry expensively projects. Standard Oil of Indiana's ad is of a piece with the press releases—virtually identical—of the American Petroleum Institute and the Chamber of Commerce of the United States, which claim that individuals own 90 percent of the largest oil companies. Put in the same category the message which Bob Hope has dinned into millions of ears via television: "Who owns America's oil companies? Fourteen million Americans, trusting in companies like Texaco!"

On the other hand, the answer to the question of control of the energy industry is not just "Wall Street" or "the banks." To be sure, the inbred New York commercial banks dominate. But there are other pinnacles of power, equally unaccountable to the people whose money they manage, even less known by the public and press.

The Organization of Petroleum Exporting Countries (OPEC) and its control over oil receive a lot of attention. But here at home, relatively and blithely unnoticed, control of energy has concentrated in fewer and fewer hands, farther and farther away from the people who depend on it.

The growing concentration of corporate and financial power underscores the key difference between public and private power. Public power remains one of the few proven methods by which energy consumers have a voice in determining energy policy.

**T. Rowe Price Associates, based in Baltimore, is an investment counsel firm owned by its 326 employees. Curran W. Harvey is president and E. Kirkbride Miller is board chairman.*

NOTE

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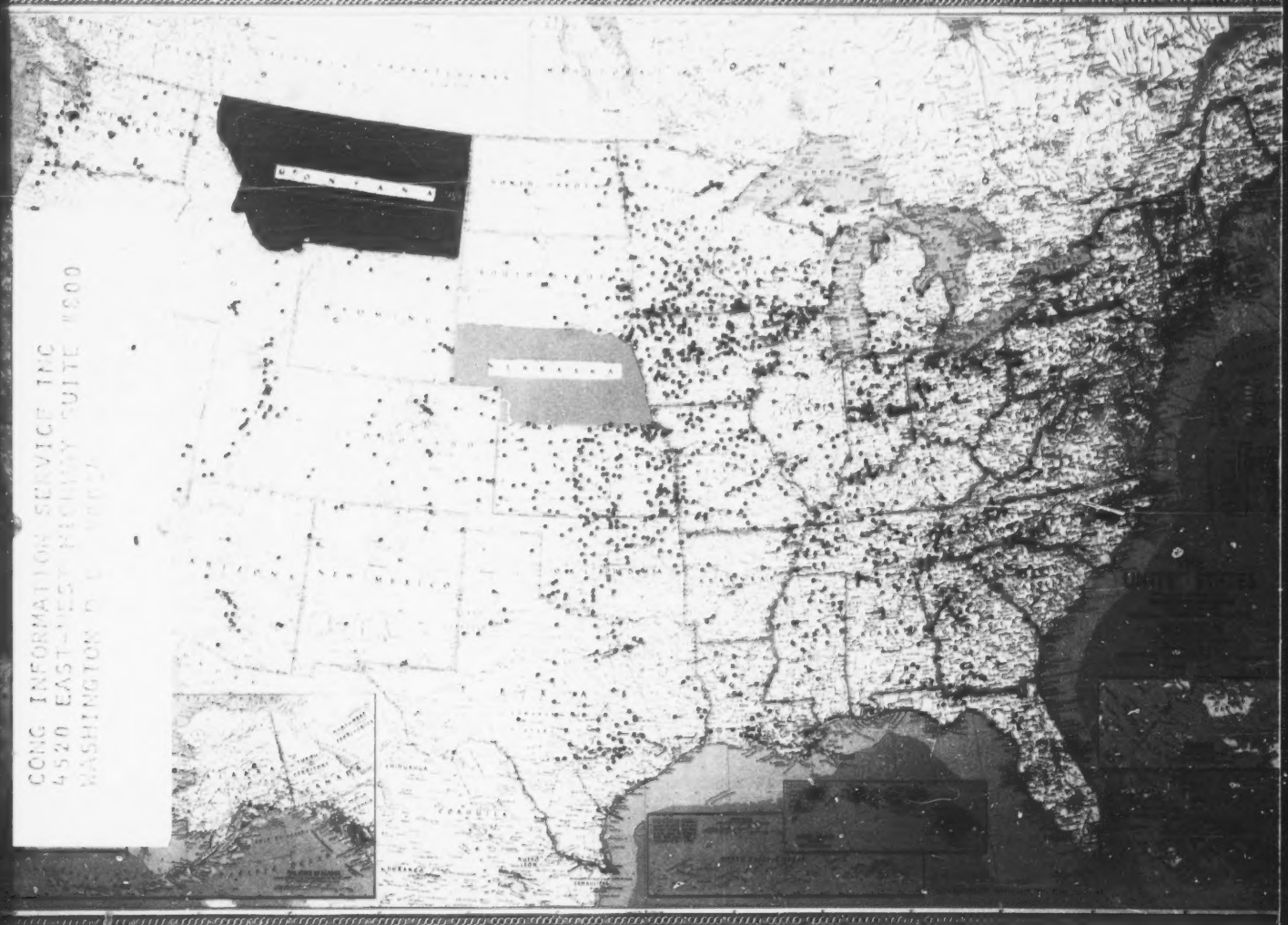

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public power

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Two new books and a trip to the West provide perspective on the impact of synfuels development on people directly affected.

FRONT COVER: APPA staffers pinned the National Geographic Society map which shows local public power systems. Nebraska, in green, is all public power; the two states without municipals, shown in black, are Montana and Hawaii (which has been temporarily relocated to the Gulf of Mexico). —Map reproduction by Adams Studio

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Spending on local public power to increase in 1981

by **JEANNIE KILMER** *contributing editor, PUBLIC POWER, and APPA assistant for statistics and surveys*

THE NATION'S LOCAL PUBLICLY OWNED electric utilities are budgeting $5.47 billion for new plant additions and improvements in 1981—an increase of 8.9 percent over the $5.03 billion they reported spending this year.

A year ago, in PUBLIC POWER's annual survey of spending plans, the local public power systems indicated that they expected to spend about $5.29 billion. Most of the difference between 1980 projected and actual total expenditures is accounted for by the difference in 1980 projected and actual nuclear generation expenditures. This year the systems reported spending $1.91 billion on nuclear generation in 1980, instead of the $2.34 billion forecast last year. Most systems projected a decrease in 1981 nuclear expenditures, however the total nuclear expenditures for 1981 are expected to rise 21.3 percent over this year, due to the projected increase by one system.

The PUBLIC POWER spending figures are for municipal electric utilities and other local publicly owned systems and do not include federal power agencies, rural electric cooperatives or private power companies.

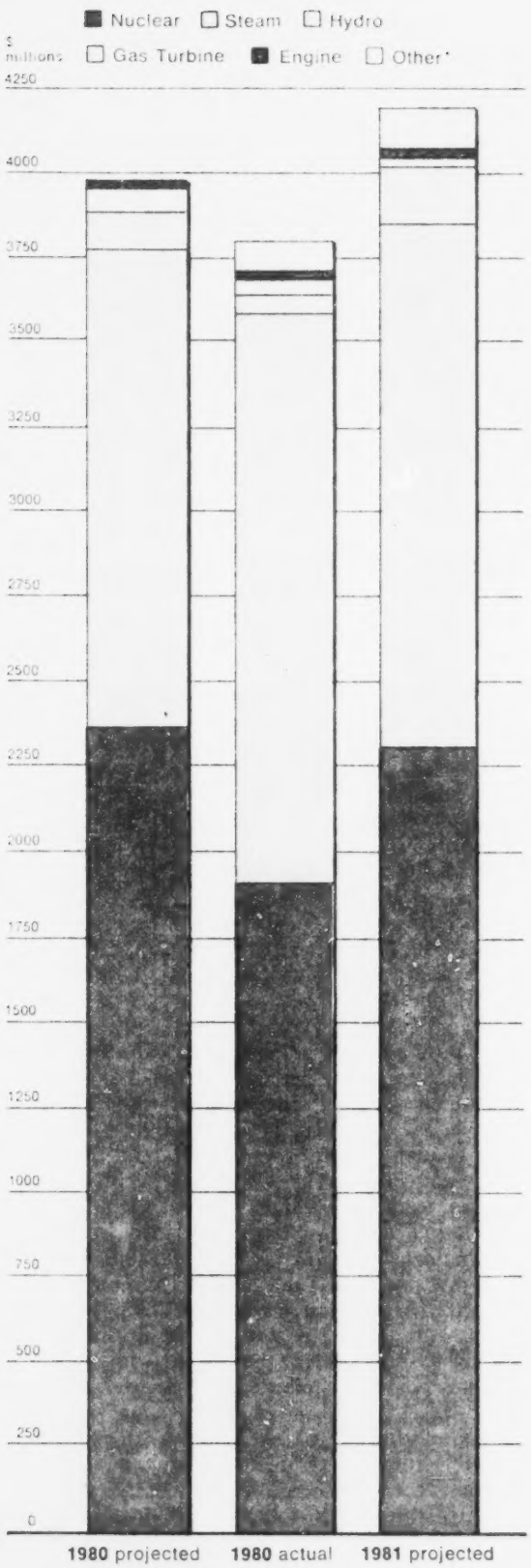
Spending for transmission and distribution, including substations, will rise an estimated 3.6 percent next year, as compared with a projected increase of 10.6 percent in generation. Actual expenditures in 1980 for hydro generation were less than half of what had been projected for that year, and may have been deferred until 1981, causing the 243 percent increase in 1981 projected expenditures over actual 1980 expenditures.

PUBLIC POWER's survey of spending plans includes reports from hundreds of municipal and other local publicly owned electric utilities, estimated to represent about two-thirds of the total local public power segment of the electric utility industry on the basis of number of customers served. The reports have been projected to cover all local publicly owned systems.

LOCAL PUBLIC POWER SYSTEM PLANT ADDITIONS

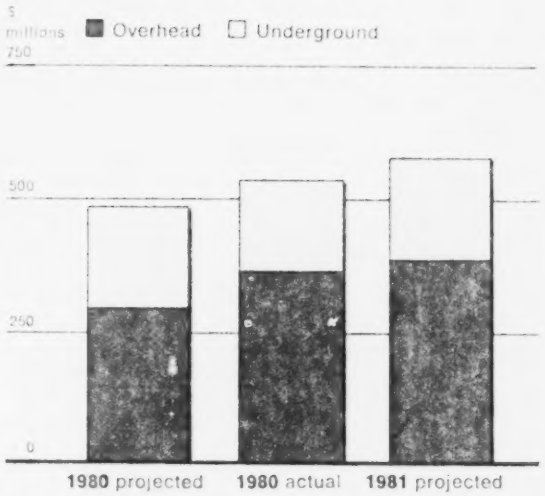
	1980 (projected)	1980 (actual)	1981 (projected)
Distribution			
Overhead below 33 kv	$ 295,705,000	$ 365,698,000	$ 374,521,000
Underground below 33 kv	203,158,000	162,899,000	198,424,000
Total Distribution	498,863,000	528,597,000	572,945,000
Transmission			
Overhead above 33 kv	315,288,000	254,044,000	233,475,000
Underground above 33 kv	5,623,000	6,901,000	15,408,000
Total Transmission	320,911,000	260,945,000	248,883,000
Substations	345,816,000	279,457,000	328,022,000
Other Transmission and Distribution	149,686,000	173,020,000	136,511,000
Total T & D	1,315,276,000	1,242,019,000	1,286,361,000
Generation			
Nuclear	2,342,199,000	1,905,889,000	2,311,486,000
Steam (fossil-fueled)	1,432,138,000	1,685,403,000	1,554,415,000
Hydro	113,924,000	49,432,000	169,585,000
Gas Turbine	58,196,000	31,046,000	17,647,000
Engine (diesel or other internal combustion)	26,327,000	26,444,000	27,771,000
Combined Cycle		2,426,000	3,040,000
Other		85,830,000	104,656,000
Total Generation	3,972,784,000	3,786,470,000	4,188,600,000
GRAND TOTAL	$5,288,060,000	$5,028,489,000	$5,474,961,000

Local Public System Plant Additions and Improvements

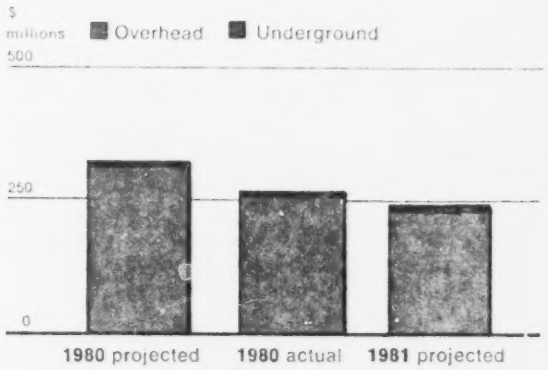


Generation

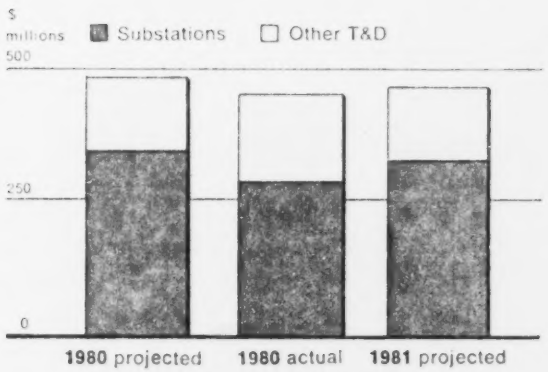
* "Other" generation includes geothermal, solar, wind, waste heat recovery and combined cycle



Distribution below 33kv



Transmission above 33kv



Substations and Other T&D

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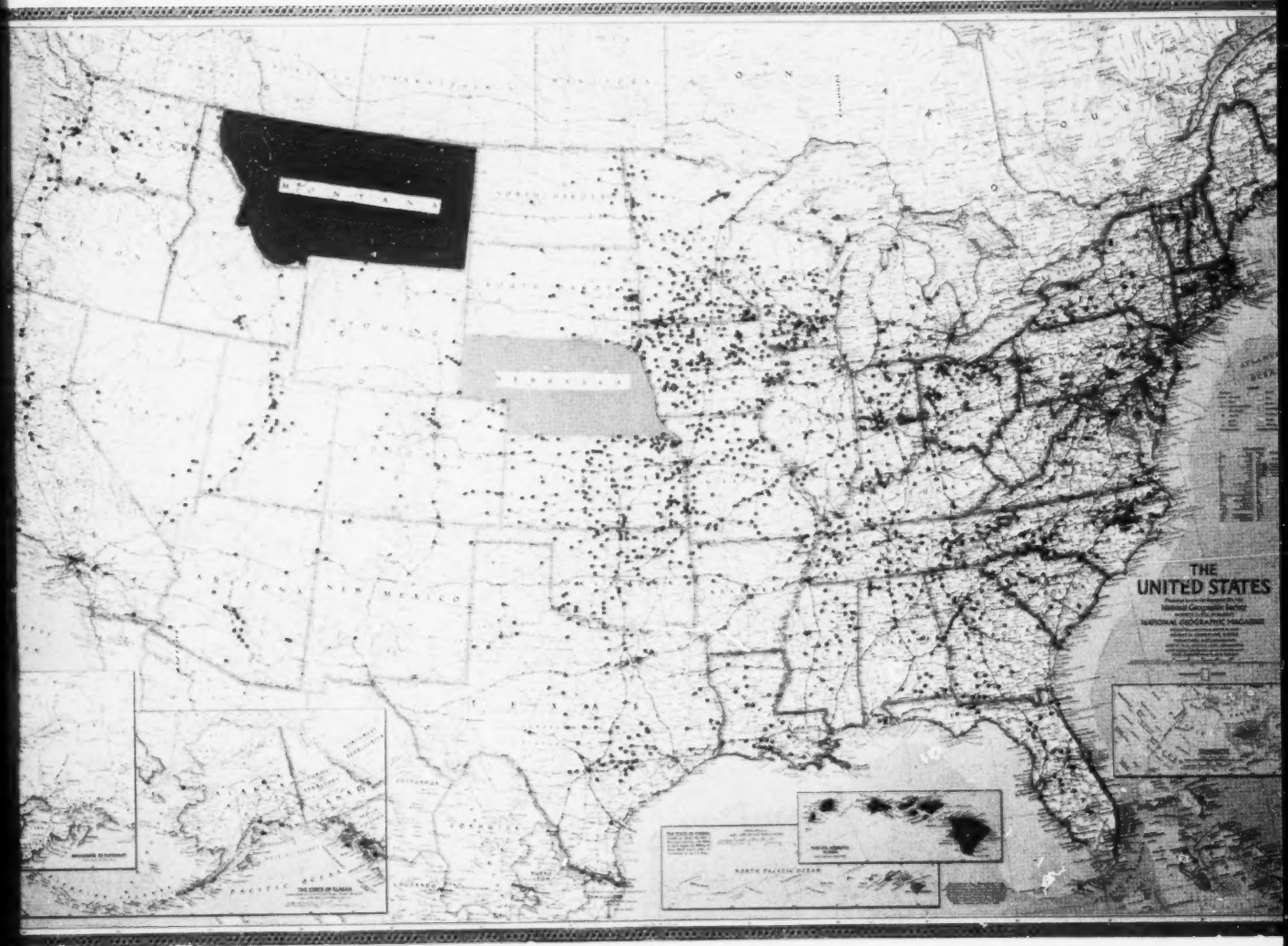

1981 Directory

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ELECTRIC UTILITY STATISTICS

Additions and corrections to be included in the next directory should be sent to PUBLIC POWER Directory, 2600 Virginia Ave., Suite 212, N.W. Washington, D.C. 20037.

Private company, local public and federal power statistics projected from Energy Information Administration reports and data reported to the American Public Power Association. Rural electric data are from the Rural Electrification Administration.

NUMBER OF SYSTEMS

Private power companies	218
Local publicly owned systems, including municipals, public utility districts and state and county systems	2,206
Publicly owned joint action agencies	51
Rural electrics (including 870 distribution co-ops and 46 generation and transmission co-ops	916
Federal power agencies	8

		1978	1978 %	1979	1979 %
NUMBER OF CUSTOMERS	Local public systems	11,993,261	13.6	12,413,025	13.7
	Private	67,195,099	76.2	69,117,546	76.1
	REA borrowers	8,962,540	10.2	9,275,086	10.2
	Federal	13,127	.01	12,911	.01
	TOTAL	88,164,027	100	90,818,568	100
KWH SALES (to ultimate customers in millions of kwh)	Local public systems	246,142	12.2	260,418	12.6
	Private	1,562,698	77.6	1,604,939	77.4
	REA borrowers	133,009	6.6	139,471	6.7
	Federal	72,587	3.6	69,730	3.4
	TOTAL	2,014,436	100	2,074,558	100
ELECTRIC OPERATING REVENUES (in thousands of dollars)	Local public systems	$ 8,732,938	10.3	$ 9,946,816	10.6
	Private	65,427,274	77.4	72,851,121	77.4
	REA borrowers	7,038,706	8.3	8,061,512	8.6
	Federal	3,277,914	3.9	3,312,614	3.5
	TOTAL	84,476,832	100	94,172,063	100
NET ELECTRIC PLANT INVESTMENT (thousands of dollars) (does not include nuclear fuel)	Local public systems	$ 27,024,280	11.6	$ 30,645,534	11.9
	Private-less nuclear fuel	170,389,323	73.3	188,897,507	73.3
	REA borrowers	16,617,824	7.1	19,521,479	7.6
	Federal	18,561,370	8.0	18,710,400	7.3
	TOTAL	232,592,797	100	257,774,920	100
INSTALLED CAPACITY (in thousands of kwh)	Local public systems	53,639	9.4	55,516	9.6
	Private	445,527	78.5	456,495	78.6
	REA borrowers	14,373	2.5	16,578	2.9
	Federal	54,170	9.5	52,051	9.0
	TOTAL	567,709	100	580,640	100
KWH GENERATION (in millions of kwh)	Local public systems	241,399	10.7	255,883	11.1
	Private	1,721,375	76.6	1,756,180	76.3
	REA	48,728	2.2	60,181	2.6
	Federal	236,137	10.5	230,586	10.0
	TOTAL	2,247,639	100	2,302,830	100

20 LARGEST LOCAL PUBLICLY OWNED ELECTRIC SYSTEMS

ELECTRIC CUSTOMERS SERVED—1979

1.	Los Angeles (Cal.) Department of Water & Power*	1,175,254
2.	Puerto Rico Electric Power Authority	952,153
3.	Sacramento (Cal.) Municipal Utility District	324,438
4.	San Antonio (Texas) City Public Service Board	323,553
5.	Salt River Project, Phoenix, Ariz.	313,135
5.	Memphis (Tenn.) Light, Gas and Water Division	304,978
7.	Seattle (Wash.) City Light	280,193
8.	Jacksonville (Fla.) Electric Authority*	222,398
9.	Omaha (Neb.) Public Power District	209,331
10.	Nashville (Tenn.) Electric Service	201,555
11.	Austin (Texas) Electric Utility	154,681
12.	Snohomish County Public Utility District, Everett, Wash.	139,556
13.	Knoxville (Tenn.) Utilities Board	121,260
14.	Chattanooga (Tenn.) Electric Power Board	119,601
15.	Nebraska Public Power District, Columbus, Neb.	105,659
16.	Tacoma (Wash.) City Light	100,273
17.	Colorado Springs (Colo.) Department of Public Utilities	97,437
18.	Orlando (Fla.) Utilities Commission	83,914
19.	Anaheim, City of, Cal.*	80,038
20.	Clark County Public Utility District, Vancouver, Wash.	78,549

NET ELECTRIC PLANT—1979

1.	Power Authority of the State of New York	$3,069,742,000
2.	Los Angeles (Cal.) Department of Water & Power*	2,257,624,031
3.	Salt River Project, Phoenix, Ariz.	2,190,780,000
4.	Nebraska Public Power District, Columbus, Neb.	1,467,833,000
5.	Puerto Rico Electric Power Authority	1,458,664,000
6.	San Antonio (Texas) City Public Service Board	1,212,959,000
7.	Omaha (Neb.) Public Power District	886,766,000
8.	Sacramento (Cal.) Municipal Utility District	829,454,964
9.	South Carolina Public Service Authority*	759,839,000
10.	Austin (Texas) Electric Utility	662,607,560
11.	Chelan County Public Utility District, Wenatchee, Wash.	604,084,160
12.	Municipal Electric Authority of Georgia	509,706,995
13.	Lower Colorado River Authority, Austin, Texas	439,293,134
14.	California Department of Water Resources	423,829,921
15.	Jacksonville (Fla.) Electric Authority*	403,301,716
16.	Seattle (Wash.) City Light	389,337,884
17.	Grant County Public Utility District, Ephrata, Wash.	283,539,780
18.	Tacoma (Wash.) City Light	277,568,627
19.	Eugene (Ore.) Water & Electric Board	251,248,652
20.	Kansas City (Kan.) Board of Public Utilities	240,443,000

KWH SALES—1979

1.	Power Authority of the State of New York	40,400,000,000
2.	Los Angeles (Cal.) Department of Water & Power*	26,514,608,120
3.	Puerto Rico Electric Power Authority	11,120,701,000
4.	Salt River Project, Phoenix, Ariz.	10,788,482,410
5.	Sacramento (Cal.) Municipal Utility District	9,004,916,000
6.	Memphis (Tenn.) Light, Gas and Water Division	8,932,193,000
7.	Grant County Public Utility District, Ephrata, Wash.	8,827,789,000
8.	Chelan County Public Utility District, Wenatchee, Wash.	8,736,042,434
9.	Seattle (Wash.) City Light	8,340,179,000
10.	Nebraska Public Power District, Columbus, Neb.	8,259,648,000
11.	Nashville (Tenn.) Electric Service	7,500,000,000
12.	San Antonio (Texas) City Public Service Board	6,997,322,000
13.	South Carolina Public Service Authority*	5,953,000,000
14.	Jacksonville (Fla.) Electric Authority*	5,782,879,000
15.	Chattanooga (Tenn.) Electric Power Board	5,026,991,000
16.	Omaha (Neb.) Public Power District	5,015,484,000
17.	Snohomish County Public Utility District, Everett, Wash.	4,751,660,455
18.	Tacoma (Wash.) City Light	4,668,000,000
19.	Municipal Electric Authority of Georgia	4,400,000,000
20.	Lower Colorado River Authority, Austin, Texas	4,101,761,741

ELECTRIC REVENUES—1979

1.	Los Angeles (Cal.) Department of Water & Power*	$791,842,048
2.	Puerto Rico Electric Power Authority	729,870,000
3.	Power Authority of the State of New York	716,238,000
4.	Salt River Project, Phoenix, Ariz.	444,887,000
5.	Memphis (Tenn.) Light, Gas and Water Division	281,693,616
6.	Jacksonville (Fla.) Electric Authority*	275,035,000
7.	San Antonio (Texas) City Public Service Board	274,601,000
8.	Nashville (Tenn.) Electric Service	231,456,268
9.	Nebraska Public Power District, Columbus, Neb.	224,662,000
10.	Omaha (Neb.) Public Power District	194,087,000
11.	Chattanooga (Tenn.) Electric Power Board	156,865,000
12.	Sacramento (Cal.) Municipal Utility District	150,227,570
13.	Austin (Texas) Electric Utility	148,415,095
14.	South Carolina Public Service Authority*	135,697,426
15.	Lower Colorado River Authority, Austin, Texas	130,483,736
16.	Knoxville (Tenn.) Utilities Board	122,314,400
17.	Municipal Electric Authority of Georgia	118,568,472
18.	Orlando (Fla.) Utilities Commission	113,715,884
19.	Springfield (Mo.) City Utilities	83,634,137
20.	Lansing (Mich.) Board of Water & Light	78,851,434

* Fiscal year not coincident with calendar year.

Sources: Annual reports and data reported to American Public Power Association.

PUBLIC POWER Directory

PUBLIC POWER'S Directory of Local Publicly Owned Electric Utilities includes more than 2,200 listings of local publicly owned electric systems, organizations of these utilities, and federal power agencies.

Included in the directory are: municipal electric systems; public utility districts; public power districts; other types of state and county electric systems; organizations which include local publicly owned electric systems, and federal power agencies.
Not included in this directory are: privately owned electric power companies and rural electric cooperatives.

Listings cover the following information where available: name of utility; address, including mailing zip code; telephone number, including area code and local number; chief executive officer, usually superintendent (supt.) or manager (mgr.); year system was established; number of meters (met.) served; generation (gen.) by type, including steam, gas turbine, internal combustion engine (eng.) and hydroelectric (hydro) in kilowatts of capacity (kw), usually nameplate ratings, and total generation for the latest available year in million kilowatt-hours (kwh); power purchased (pur.) at wholesale for latest full year, either calendar or fiscal, in million kilowatt-hours; and annual electric revenues (rev.) for the latest available full year.

Local publicly owned electric utilities are listed alphabetically by states. Municipal systems are listed by the name of the city. Other types of local public power systems—public utility districts, public power districts and other state- and county-owned electric systems—are listed alphabetically by the name of the utility. Washington state public utility districts are shown by the name of the county served.

The directory lists more than 2,200 local publicly owned electric utilities in 48 states, Canal Zone, Puerto Rico, the Virgin Islands, Guam and American Samoa. There are no local public systems in Hawaii or Montana.

Numbers of local publicly owned electric systems by states are shown in the accompanying table.

Nebraska, the only state in which all electric utility service is consumer-owned—provided by either publicly owned or cooperative systems—leads the nation with 162 local publicly owned utilities. In addition 223 other communities in Nebraska own municipal electric systems which are operated under lease agreements by Nebraska Public Power District and 20 other communities lease their municipal electric utilities to Loup Power District, so that the state has a total of 405 local publicly owned electric utilities.

Other leading states in numbers of publicly owned systems are: Iowa, 141; Kansas, 131; Minnesota, 123; Missouri, 87; Wisconsin, 84; Ohio, 83; Texas, 78; North Carolina, 73; Indiana, 72; and Oklahoma, 69.

The table shows that a total of four states have more than 100 local publicly owned electric utilities, and 13 states have 50 or more local publicly owned power systems.

This is PUBLIC POWER'S twentieth annual directory, and a number of changes from the previous directories, including the numbers of systems shown for several states and the national total, reflect corrections from the earlier listings as well as changes during the past year. This year, for the first time, a listing of major Canadian electric systems is included, beginning on page D-49.

Although PUBLIC POWER is responsible for the directory, the editors acknowledge with gratitude the many sources of information which have made it possible to compile what is believed to be the most accurate listing of the local publicly owned electric utilities ever published.

These sources include: hundreds of local publicly owned utilities which submitted information to PUBLIC POWER on a survey form; reports and files of the American Public Power Association, the national service organization of the local publicly owned electric utilities; officials of regional and state organizations; and many individual officials of local publicly owned electric utilities who contributed data.

Local publicly owned electric utilities

State	*number*
ALABAMA	36
ALASKA	10
ARIZONA	17
ARKANSAS	15
CALIFORNIA	32
COLORADO	31
CONNECTICUT	6
DELAWARE	9
FLORIDA	34
GEORGIA	52
HAWAII	0
IDAHO	13
ILLINOIS	41
INDIANA	72
IOWA	141
KANSAS	131
KENTUCKY	30
LOUISIANA	22
MAINE	7
MARYLAND	7
MASSACHUSETTS	40
MICHIGAN	41
MINNESOTA	123
MISSISSIPPI	24
MISSOURI	87
MONTANA	0
NEBRASKA	405
NEVADA	9
NEW HAMPSHIRE	5
NEW JERSEY	9
NEW MEXICO	8
NEW YORK	49
NORTH CAROLINA	73
NORTH DAKOTA	11
OHIO	83
OKLAHOMA	69
OREGON	16
PENNSYLVANIA	34
RHODE ISLAND	1
SOUTH CAROLINA	22
SOUTH DAKOTA	35
TENNESSEE	63
TEXAS	78
UTAH	36
VERMONT	15
VIRGINIA	17
WASHINGTON	44
WEST VIRGINIA	2
WISCONSIN	84
WYOMING	13
AMERICAN SAMOA	1
CANAL ZONE	1
GUAM	1
PUERTO RICO	1
VIRGIN ISLANDS	1
TOTAL	2,206

(Joint action agencies (51), listed separately (D-45--D-47), are no longer included in state totals.)

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LANSING Bd. of Water & Light, 123 W. Ottawa St., Box 13007, 48901, (Zip Code) 517/487-1885, (Telephone) Earl F. Brush, dir. and gen. mgr. (1885); (Title, Year established) 75,854 met.; gen. 628,000 kw steam, (Number of meters served, Installed generating capacity) 2,332.8 million kwh; pur. 1 million kwh; (Wholesale purchases) rev. $88,152,834. (Gross annual electric revenue)

ALABAMA

(Systems designated "TVA" are distributors of Tennessee Valley Authority power and purchase all of their power from TVA.)

ALBERTVILLE Mun. Utilities Board, 210 West Main St., Box 130, 35950, 205/878-3761, James W. Johnson, gen. mgr. (1938); 6,500 met.; pur. 299 million kwh; rev. $8,751,827. (TVA)

ALEXANDER CITY Electric Dept., Russell Road, Box 637, 35010, 205/234-4412, John S. Heard, supt. (1918); 3,600 met.; no gen.; pur. 83 million kwh; rev. $2,500,000.

ANDALUSIA Electric Dept., City Hall, 36420, 205/222-1332, W. E. Turner, mgr. (1944); 4,138 met.; no gen.; pur. 70 million kwh; rev. $3,000,000.

ATHENS Electric Dept., Box 268, 205/232-3140, 35611, Charles W. Robinson, mgr. (1934); 17,990 met.; pur. 428.3 million kwh; rev. $11,215,059. (TVA)

BESSEMER Electric Service, 1600 First Ave., N., Box 864, 35020, 205/424-2301, W. G. Pettey, Jr., util. mgr. (1939); 12,809 met.; pur. 225.6 million kwh; rev. $6,205,940. (TVA)

BRUNDIDGE Electric Dept., Box 127, 36010, 205/735-2321, Jack Taylor, mgr. (1947); 1,192 met.; no gen.; pur. 21.1 million kwh; rev. $587,389.

COURTLAND Electric Dept., Box 160, 35618, 205/637-2707, Roy Coffey, acting supt. (1938); 810 met., pur. 13.3 million kwh; rev. $365,473. (TVA)

CULLMAN Util. Board, Drawer 927, 35055, 205/734-2343, Jimmy Garrett, mgr. (1920); 6,158 met.; pur 223.8 million kwh; rev. $6,046,961. (TVA)

DECATUR Electric Dept., 110 Johnston St., S.E., Box 1469, 35602, 205/353-8472, Richard L. Watkins, gen. mgr. (1938); 16,913 met.; pur. 966.1 million kwh; rev. $23,092,104. (TVA)

DOTHAN, City of, Box 2128, 36302, 205/794-0361, Wylie H. Smith, supt. (1913); 20,649 met.; no gen.; pur. 598.6 million kwh; rev. $21,831,216.

ELBA Electric Dept., 36323, I. Dorman, mgr.

EVERGREEN Municipal Light Dept., 36401, J. W. Weaver, supt.; 32 million kwh.

FAIRHOPE Electric Dept., 387 Fairhope Ave., P.O. Drawer 429, 36352, 205/928-2136, Phil Rutherford, supt.; 3,300 met.; no gen.; pur. 57 million kwh; rev. $2,200,000.

FLORENCE Electricity Dept., Box 877, 110 W. College St., 35630, 205/764-7271, J. Howard McClanahan, mgr. (1936); 33,372 met.; pur. 795.3 million kwh; rev. $25,446,891. (TVA)

FOLEY Utilities Board (Riviera Utilities), 413 E. Laurel Ave., Box 550, 36535, 205/943-5001, H. Sewell St. John, Jr., gen. mgr. (1941); 13,318 met.; no gen.; pur. 222 million kwh; rev. $9,399,646.

FORT PAYNE Improvement Authority, Box 150, 35967, 205/845-0671, George L. Black, mgr. (1940); 4,762 met.; pur. 142.1 million kwh; rev. $3,942,995. (TVA)

GUNTERSVILLE Electric Board, Municipal Bldg., 35976, 205/582-5691, C. H. Gordon, mgr. (1938); 4,350 met.; pur. 147.9 million kwh; rev. $4,316,629. (TVA)

HARTFORD Water & Light Dept., 203 W. Main St., 36344, 205/588-2245; H. R. Lee, supt.; 1,100 met.; no gen.; pur. 22 million kwh.

HARTSELLE Electric Board, Box 847, 35640, 205/773-2588, Max King, mgr. (1938); 3,589 met.; pur. 90.5 million kwh; rev. $2,456,034. (TVA)

HUNTSVILLE Utilities, Box 2048, 35804, 205/533-0300, Edward E. Cobb, gen. mgr. (1940); 73,038 met.; pur. 2,531.9 million kwh; rev. $69,998,172. (TVA)

LAFAYETTE Mun. Light Plant, Chas. Jannings, City Clerk, 36862, 205/864-2211; 1,150 met.; no gen.; 19 million kwh.

LANETT Electric Dept., 210 Lanier St., 36863, 205/642-0771, Edward Wright, city clerk; 3,100 met.; no gen.

LUVERNE Light Dept., 36039, R. P. Coggins, Jr., supt.; 29 million kwh; rev. $1,000,000.

MUSCLE SHOALS Electric Board, 1000 Avalon Ave., 35660, 205/383-6681, T. D. Lasater, mgr. (1933); 3,301 met.; pur. 144.5 million kwh; rev. $4,660,505. (TVA)

OPELIKA Light & Power Dept., 1010 Ave. C, 36801, 205/745-4681, B. J. Douglas, supt. (1884); 9,500 met.; no gen.; pur. 220 million kwh; rev. $8,250,000.

OPP Utility Board, Box 311, 36467, 205/493-4571, Edwin Wallace, mgr. (1943); 2,866 met; no gen.; pur. 60 million kwh; rev. $1,919,174.

PIEDMONT, City of, 36272, D. B. Morrison, city clerk; 34 million kwh.

ROBERTSDALE Municipal Utilities, Drawer CC, 36567, 205/947-2144, Morris W. Steiner, supt.; 1,277 met.; no gen.; 27 million kwh.

RUSSELLVILLE Electric Dept., Box 1148, 35653, 205/332-3850, Robert L. Stephenson, mgr. (1938); 3,632 met.; pur. 97.6 million kwh; rev. $2,608,977. (TVA)

SCOTTSBORO Electric Power Board, Box 399, 404 E. Willow St., 35768, 205/574-2680, L. E. Price, mgr. (1939); 6,650 met.; pur. 303.6 million kwh; rev. $8,998,348. (TVA)

SHEFFIELD Power, Water & Gas Dept., 300 Nashville Ave., Box 580, 35660, 205/383-5221, R. A. Azbell, gen. mgr. (1936); 14,897 met.; pur 437.1 million kwh; rev. $12,994,628. (TVA)

SYLACAUGA Utilities Board, Box 207, 35150, 205/249-8501, William T. Scott, mgr. (1955); 5,100 met.; no gen.; pur. 103 million kwh; rev. $4,393,900.

TARRANT CITY Electric Dept., 1000 Ford Ave., Box 6536, 35217, 205/841-1721, D. Evan Veal, mgr. (1939); 2,361 met.; pur. 75.3 million kwh; rev. $1,813,364. (TVA)

TROY Electric Utility, Box 549, 36081, 205/566-2130, G. Homer Reeves, supt. (1895); 4,000 met.; no gen.; pur. 135 million kwh; rev. $5,500,000.

TUSCUMBIA Electricity Dept., Box 269, 35674, 205/383-0321, Charles P. Ricks, mgr. (1937); 3,673 met.; pur. 91.3 million kwh; rev. $2,861,876. (TVA)

TUSKEGEE Light Dept., 210 N. Main St., 36083, 205/727-0700, William Turner, supt.; 5,700 met.; no gen.; pur. 98 million kwh; rev. $3,000,000.

ALASKA

ANCHORAGE Municipal Light & Power Dept., 1200 E. First Ave., 99501, 907/279-7671, Thomas R. Stahr, mgr. (1932); 18,048 met.; gen. 74,500 kw gas turbine, 140,900 com. cycle; 2,000 eng.; 445.2 million kwh; pur. 111.4 million kwh; rev. $16,794,000.

CORDOVA Public Utilities, Box 20, 99574, 907/424-3291, Gerald Meyer, mgr. (1952); 1,044 met.; gen. 8,000 kw eng., 10 million kwh; pur. none; rev. $500,000.

FAIRBANKS Mun. Utilities, 645 Fifth Ave., Box 2215, 99707, 907/456-6633, Robert L. Burg, gen. mgr. (1952); 5,800 met.; gen. 45,500 kw, 28,500 kw steam, 8,500 kw gas turbine, 8,500 kw eng., 123 million kwh; pur. 16 million kwh; rev. $4,834,424.

KETCHIKAN Public Utilities, 334 Front St., Box 7300, 99901, 907/225-3111, N. L. Teague, util. mgr. (1935); 5,062 met.; gen. 21,000 kw, 11,750 kw eng., 9,250 kw hydro, 73 million kwh; pur. none; rev. $2,442,196.

METLAKATLA Power and Light, Box 346, 99926, 907/886-4451, Edgar W. Callen, gen mgr. (1927); 400 met.; gen 6,000 kw, 3,000 kw hydro, 3,000 kw eng., 15 million kwh.

NOME Joint Utilities, Box 70, 99762, 907/443-5288, Dean Wolfe, mgr. (1954); 715 met.; gen 5,400 kw eng., 14 million kwh; pur. none; rev. $1,200,000.

PETERSBURG Mun. Light and Power, Box 329, 99833, 907/772-4203, Bernie Cutts, supt. (1924); 1,295 met.; gen. 7,150 kw, 2,000 kw hydro, 5,350 kw eng., 10.4 million kwh; pur. none; rev. $1,245,866.

SEWARD Electric Dept., Municipal Bldg., Box 337, 99664, 907/224-5215, Tom Small, engr., (1955); 1,338 met.; gen. 5,500 kw eng., 292,200 kwh; pur. 24.5 million kwh; rev. $927,286.

SITKA Mun. Utilities, Lincoln St., Box 79, 99835, 907/747-6633, James D. Dwyer, supt. (1941); 2,772 met.; gen. 16,650 kw, 8,600 kw eng., 8,050 kw hydro, 45.6 million kwh; pur. 92,000 kwh; rev. $2,126,000.

ALASKA
(continued)

WRANGELL Light & Power Dept., Box 531, 99929, 907/874-2381, C. T. Sturdevant, supt.; 934 met.; gen. 7,750 kw eng., 11 million kwh; pur. none; rev. $250,000.

ARIZONA

ARIZONA POWER AUTHORITY Box 6694, Phoenix, 85005, 602/255-4263, Lester S. Ormsby, admin. (1949); 16 met. (wholesale); no gen., pur. 724 million kwh; rev. $6,413,773.

CORTARO WATER USERS ASSN., Box 28, Marana, 85238, 602/682-3233; C. B. DeSpain, gen. mgr., 20 met., no gen.

ELECTRICAL DISTRICT NO. 2, Pinal County, Box 548, Coolidge, 85228, 602/723-5811, William J. Metheny, gen. mgr. (1923); 2,250 met.; no gen.; pur. 190.3 million kwh; rev. $4,097,890.

ELECTRICAL DISTRICT NO. 3, Pinal County, 711 E. Cottonwood Lane, Suite C, Casa Grande 85222, 602/836-8201, Milton S. Ray, mgr. (1961); 486 met.; no gen.; pur. 244.1 million kwh; rev. $3,550,600.

ELECTRICAL DISTRICT NO. 4, 231 S. Sunshine Blvd., Eloy, 84231, 602/466-7336, James Sweeney, mgr. (1936); 400 met.; no gen.; pur. 128.8 million kwh; rev. $1,420,319.

ELECTRICAL DISTRICT NO. 5, Pinal County, Box 8, Red Rock 85245, William D. Woehlecke, gen. mgr.; 265 met.; no gen.; pur. 86.4 million kwh; rev. $550,820.

ELECTRICAL DISTRICT NO. 6, Pinal County, Rte. 1, Box 26, Queen Creek, 85242, Newell Barney, sec.-treas.; 123 met.; no gen.; pur. 101 million kwh; rev. $1,099,097.

HOLBROOK, 86025. **(Town owns distribution system; leased to Arizona Public Service Co.)**

MARICOPA WATER DISTRICT, Box 739, Peoria, 85345, Floyd O. Allen, sec.-mgr.; 83 met.; no gen.; pur. 39 million kwh; rev. $399,296.

MESA, City of, 55 N. Center St., Box 1466, 85201, 602/834-2011, Richard W. Williams, elec. util. dir. (1917); 9,238 met.; no gen.; pur. 197.4 million kwh; rev. $4,578,630.

NAVAJO TRIBAL UTILITY AUTHORITY, Box 170, Fort Defiance, 86504, 602/729-5721, Malcolm P. Dalton, gen. mgr. (1965); 17,520 met.; no gen.; pur. 405.4 million kwh; rev. $11,709,235.

PAPAGO TRIBAL UTILITY AUTHORITY, Box 816, Sells, 85634, 602/383-2236, John Raley, gen. mgr. (Aug. 1, 1975); 1,000 met.; no gen.

ROOSEVELT WATER CONSERVATION DISTRICT, Higley, 85236, Virgil McClanahan, gen. mgr.; 250 met.; no gen.

SAFFORD Mun, Utilities, 717 Main St., Box 551, 85546, 602/428-2762, James R. Rein, utility dir., (1947); 2,772 met.; pur. 31.6 million kwh; rev. $1,975,560.

SALT RIVER PROJECT, Box 1980, Phoenix, 85001, 602/273-5900, A. J. Pfister, gen. mgr. (1937); 323,333 met.; gen. 2,016,254 kw steam, 236,841 kw hydro, 449,800 kw gas turbine, 414,000 kw eng. (combined cycle), 9,108.8 million kwh; pur. 1,898.9 million kwh; rev. $414,364,320.

THATCHER Municipal Utilities, 230 College Ave., Box 670, 85552, 602/428-2290, Herbert Winsor, mgr. (1946); 650 met.; no gen.; pur. 8.8 million kwh; rev. $362,860.

WELLTON MOHAWK IRRIGATION & DRAINAGE DISTRICT, Route 1, Box 19, Wellton, 85356, 602/785-3351, C. L. Gould, mgr.-secy. (1952); 2,143 met.; no gen.; rev. $1,756,012.

WICKENBURG Town of, Box 1269, 85358, 602/684-5451, Coney Orosco, dir. of pub. works (1947); 1,097 met.; no gen.; pur. 1.4 million kwh; rev. $742,401.

WILLIAMS, 86046. **(Town owns distribution system; leased to Arizona Public Service Co.)**

ARKANSAS

AUGUSTA City Light, Water & Gas Plant, 100 S. Fifth St., 72006, Ronnie Stracener, mgr.; 1,201 met. gen. 2,838 kw eng., 2.8 million kwh pur. 16 million kwh; rev. $407,527.

BENTON Utilities, 1314 Venturi, 72015, 501/778-2546, William S. Tucker, interim utilities mgr.; 7,000 met.; 633,000 kwh; pur. 103 million kwh; rev. $3,797,000.

BENTONVILLE Light & Water System, City Hall, 115 W. Central, 72712, 501/273-9061, Wayne Holloway, elec. supt. (1902); 3,800 met.; no gen.; pur. 75.8 million kwh; rev. $1,927,368.

CLARKSVILLE Light & Water, Box 99, 72830, 501/754-3148, Ottis R. Cude, mgr. (1932); 2,600 met.; no gen.; pur. 55.6 million kwh; rev. $1,859,966.

CONWAY Corp., 1319 Prairie St., Box 99, 72032, 501/329-5641, James H. Brewer, gen. mgr. (1929); 7,659 met.; gen. 26,020 kw, 15,000 kw steam, 11,020 kw eng., 1.6 million kwh; pur. 180.2 million kwh; rev. $8,161,721.

HOPE Water & Light Dept., E. Division St., Box 667, 71801, 501/777-6701, Darrell Collins, supt.; 5,600 met.; gen. 6,000 kw steam; pur. 120.2 million kwh; rev. $4,467,016.

JONESBORO City Water & Light, 400 E. Monroe, Box 1289, 72401, 501/935-5581, Marion R. Ulmer, mgr. (1906); 14,239 met.; gen. 20,000 kw, 20,000 kw steam, 7.5 million kwh; pur. 409.4 million kwh; rev. $11,500,119.

NORTH LITTLE ROCK Electric Dept., 800 Main St., Box 159, 72115, 501/372-0100, Hugh Toland, gen. mgr. (1903); 29,163 met.; no gen.; pur. 520 million kwh; rev. $20,192,915.

OSCEOLA Mun. Light & Power Plant, 316 W. Hale Ave., Box 443, 72370, 501/563-5245, Jack L. Wilson, util. mgr. (1928); 3,750 met.; gen. 5,000 kw; pur. 100.9 million kwh; rev. $3,888,237.

PARAGOULD Light Plant Commission, 303 W. Court St., 72450, 501/236-8571, John H. McDaniel, mgr. (1938); 7,896 met.; gen. 55,100 kw, 4,600 kw eng., 30,500 hydro; 1.4 million kwh; pur. 197 million kwh; rev. $3,695,106.

PARIS Mun. Light & Water Plant, Box 271, 72855, 501/963-2450, Jim O'Bar, mgr.; 1,650 met.; no gen.; pur. 28 million kwh; rev. $952,000.

PIGGOTT Mun. Light, Water & Sewer, 194 W. Court St., 72454, 501/598-3243, Denver Turner, supt. (1923); 2,343 met.; gen. 7,200 kw eng., 22 million kwh; pur. 26.7 million kwh; rev. $665,236.

PRESCOTT Water & Light Plant, Box 676, 71857, 501/887-2210, Clifton Cummings, supt.; 1,915 met.; gen. 1,000 kw eng.

SILOAM SPRINGS, City of, 410 N. Broadway, 72761, 501/524-5136, James R. Kirchoff, elec. supt., (1901); 3,715 met.; no gen.; pur 113.1 million kwh; rev. $3.13 million.

WEST MEMPHIS Utility Comm., 604 E. Cooper, Box 38, 72301, P. G. Para, mgr.; 10,350 met.; no gen.; pur. 237 million kwh.

CALIFORNIA

ALAMEDA Bureau of Electricity, 2000 Grand St., 94501, 415/522-7411, Jack Shepard, gen. mgr. and chief engr. (1887); 27,057 met.; no gen.; pur. 353 million kwh; rev. $14,388,765.

ANAHEIM, City of, 518 S. Anaheim Blvd., Box 3222, 92803, 714/999-5173, Gordon W. Hoyt, util. dir. (1895); 82,609 met.; no gen.; pur. 1,726.7 million kwh; rev. $70,842,754.

AZUSA Light, Power & Water Dept., 777 N. Alameda Ave., 91702, 213/334-0215, Hugh Gerharz, supt. (1898); 10,306 met.; no gen.; pur. 163 million kwh; rev. $7,384,042.

BANNING, City of, 161 W. Ramsey, Box 998, 92220, 714/849-4511, Allen V. Jost, public service/utilities, (1923); 5,000 met.; no gen.; pur. 63.5 million kwh; rev. $1,148,699.

BIGGS Mun. Utilities, Box 307, 95917, 916/868-5436, W. T. West, city supt. (1903); 660 met.; no gen.; pur. 7.9 million kwh; rev. $290,000.

BURBANK Public Service Dept., 164 W. Magnolia Blvd., Box 631, 91503, 213/847-9640, Ronald O. Snyder, gen. mgr. (1913); 42,865 met.; gen. 267,000 kw, 148,000 kw steam, 74,000 kw gas turbine, 5,000 kw hydro, 578,397 million kwh; pur. 286,710 million kwh; rev. $57,501,208.

CALIFORNIA DEPT. OF WATER RESOURCES, 1416 Ninth St., Sacramento 95814, 916/445-6582, Ronald B. Robie, dir. (1958); no retail customers; gen. 1,101,400 kw hydro, 2,370 million kwh; pur. 3,275.4 million kwh; rev. $30,537,510.

COLTON, City of, 650 N. La Cadena Ave., 92324, 714/825-3110, ext. 26, Gale A. Drews, elec. util. dir. (1897); 9,400 met.; no gen.; rev. $6.164 million.

GLENDALE Public Service Dept., 119 N. Glendale Ave., 91206, 213/956-2107, W. H. Fell, gen. mgr. and ch. engr. (1909); 66,232 met.; gen. 268,000 kw, 117,000 kw steam, 53,000 kw gas turbine, 98,000 kw eng., (combined cycle), 18,000 kw hydro, 492.8 million kwh; pur. 459.9 million kwh; rev. $45,397,583.

GRIDLEY Municipal Util., City Hall, 685 Kentucky St., Box 755, 95948, 916/846-3631, James M. Ward, dir. pub. wks. (1910); 1,600 met.; no gen.; pur. 22.7 million kwh; rev. $621,318.

HEALDSBURG, City of, Municipal Electric, 126 Matheson St., 95448, 707/433-9425, Micheal McDonald, city mgr., (1895); 3,661 met.; no gen.; pur. 46.5 million kwh; rev. $1,976,046.

HETCH HETCHY WATER SUPPLY & POWER PROJECT, 855 Harrison St., San Francisco, 94107, 415/558-3821, Oral L. Moore, gen. mgr. (1925); no retail residential customers; gen. 292,500 kw hydro. 1,399.4 million kwh; pur. 1,005.8 million kwh; rev. $50,684,000.

IMPERIAL IRRIGATION DISTRICT, 333 E. Main St., Imperial, 92251, 714/355-1112, Donald A. Twogood, gen. mgr.; 45,555 met.; gen. 381,776 kw, 185,600 kw steam, 110,000 kw gas turbine, 13,776 kw eng., 72,400 kw

hydro, 1,264 million kwh; pur. 406.3 million kwh.

LODI, City of, 221 W. Pine St., 95240, 209/334-5634, ext. 218 or 219, David K. Curry, util. dir., (1910); 15,600 met.; no gen.; pur. 227.3 million kwh; rev. $9,454,274.

LOMPOC Light and Water Dept., 119 W. Walnut Ave., 93436, 805/736-1261, William F. Ruffner, elec. supt.: 8,630 met.; no gen.; pur. 62.3 million kwh; rev. $1,309,344.

LOS ANGELES Department of Water and Power, 111 N. Hope St., Box 111, 90051, 213/481-4211, ext. 5651, Louis H. Winnard, gen. mgr. and chief engr. (1925); 1,240,032 met.; gen. 6,228,400 kw, 4,288,000 kw steam, 1,951,000 kw hydro, 19,473 million kwh; pur. 2,189.4 million kwh; rev. $936,235,118.

MERCED IRRIGATION DISTRICT, Box 2288, Merced, 95340, 209/722-5761, Reuben E. Schmidt, chief engr.; wholesale only; gen 89,100 kw hydro, 409.4 million kwh; pur. none; rev. $1,915,000.

MODESTO IRRIGATION DISTRICT, 1231 Eleventh St., Box 4060, Modesto, 95352, 209/578-1212, Les Brooks, chief admin. ofcr. (1923); 63,152 met.; gen. 95,223 kw, 49,900 kw steam; 45,323 kw hydro, 245.8 million kwh; pur. 1,012.7 million kwh; rev. $31,438,958.

OROVILLE WYANDOTTE IRRIGATION DISTRICT, Box 117, Forbestown, Calif. 95941, 916/534-1221, J. W. McDonald, mgr.; gen. 90,900 kw hydro, 153.1 million kwh. (Output sold to Pacific Gas & Electric Co.)

PALO ALTO, City of, electric utility, 250 Hamilton Ave., 94301, 415/329-2386, Edward K. Aghjayan, dir. util. (1900); 25,492 met.; no gen.; pur. 820.3 million kwh; rev. $16,316,800.

PASADENA Mun. Light & Power Dept., 100 N. Garfield Ave., 91109, 213/577-4409, Karl A. Johnson, gen. mgr. (1906); 51,286 met.; gen. 298,000 kw, 220,000 kw steam, 52,000 kw gas turbine, 26,000 kw hydro, 344.6 million kwh; pur. 535.7 million kwh; rev. $30,426,192.

REDDING, City of, 760 Parkview Ave., 96001, 916/243-3171, E. J. Simpson, dir. elec. dept. (1921); 21,000 met.; no gen.; pur. 500 million kwh; rev. $10,000,000.

RIVERSIDE Public Util., City Hall, 3900 Main St., 92522, 714/787-7502, Everett C. Ross, pub. util. dir. (1895); 66,763 met.; no gen.; pur. 1,086 million kwh; rev. $56,500,000.

ROSEVILLE Electric Dept., 316 Vernon St., 95678, 916/783-9151 (1906); 10,000 met.; no gen.; pur. 138 million kwh; rev. $3,000,000.

SACRAMENTO Mun. Utility District, 6201 S St., Box 15830, 95813, 916/452-3211, William C. Walbridge, gen. mgr. (1923); 329,986 met.; gen. 1,562,000 kw, 913,000 kw nuclear, 649,000 kw hydro, 7,390.8 million kwh; pur. 1,890.3 kwh; rev. $150,227,570.

SAN FRANCISCO Public Utilities Commission, Rm. 287, City Hall, 94102, 4115/558-4987, John D. Crowley, gen. mgr.; 867 met. (municipal and wholesale only); rev. $11,314,000.

SANTA CLARA Mun. Electric Dept., 1500 Warburton Ave., 95050, 408/984-3044, Barry R. Flynn, dir., elec. util. (1896); 39,877 met.; no gen.; pur. 1,580.6 million kwh; rev. $48,466,276.

SHASTA DAM AREA PUD, Box 777, Central Valley, 96019, 916/275-8827, Michael B. Kenney, gen. mgr. (1947); 1,800 met.; no gen.; pur. 34 million kwh; rev. $587,000.

TRUCKEE-DONNER PUD, Main St., Box 309, Truckee, 95734, 916/587-3896, A. Milton Seymour, gen. mgr. (1927); 4,400 met.; no gen.; pur. 50 million kwh; rev. $3,000,000.

TURLOCK IRRIGATION DISTRICT, 333 E. Canal Drive, Box 949, Turlock, 95380, 209/632-3861, Ernest Geddes, gen. mgr. (1887); 43,612 met.; gen. 117,360 kw hydro, 454.6 million kwh; pur. 380.2 million kwh; rev. $18,259,212.

UKIAH, City of, 203 S. School St., 95482, 707/462-2971, Alfred S. Kruth, dir. pub. wks. (1895); 5,883 met.; no gen.; pur. 87.6 million kwh; rev. $3,649,539.

VERNON Mun. Light Dept. **(leased to Southern California Edison Co.)**

YUBA COUNTY WATER AGENCY, Box 176, Dobbins, Calif. 95935, 916/692-1633, H. I. Cammack, mgr.; gen. 365,000 kw hydro, 395.1 million kwh. (Output sold to Pacific Gas & Electric Co.)

COLORADO

ASPEN Mun. Elec. System, 130 S. Galena, 81611, 303/925-2020, H. J. Stale, actg. city mgr. (1956); 1,993 met.; no gen.; pur. 34.4 million kwh; rev. $1,150,000.

BURLINGTON Mun. Light & Power, 480 15th St., 80807, 303/346-8585, Lester R. McLain, city mgr. (1920); 1,686 met.; gen. 4,600 kw eng.; pur. 21.5 million kwh., rev. $810,000.

CENTER Mun. Power & Light, 400 S. Worth, Box 400, 81125, 303/754-3497, Darrell T. Davis, supt. (1941); 777 met.; gen. 1,700 kw eng.; pur. 8.4 million kwh; rev. $118,890.

COLORADO SPRINGS Dept. of Public Utilities. 18 S. Nevada Ave., 80947, 303/636-1212, James D. Phillips, dir. (1924); 97,437 met.; gen. 520,000 kw, 514,000 kw steam, 6,000 kw hydro, 2,003 million kwh; pur. 165 million kwh; rev. $50,976,942.

DACONO Electric Dept., Box 186, 80514, 303/833-2317, Walter J. Bourn, mayor; 120 met.; no gen.

DELTA Mun. Light & Power, 1133 Main St., Box 19, 81416, 303/874-7566, Howard R. Logan, supt., (1937); 2,000 met.; gen. 4,989 kw eng., 4.1 million kwh; pur. 24.5 million kwh; rev. $1,051,783.

ESTES PARK Light & Power Dept., Box 1200, 80517, 303/586-5331, Robert L. Dekker, dir. (1945); 5,562 met.; gen. 600 kw hydro, 1,284,314 kwh; pur. 57.1 million kwh; rev. $2,360,200.

FLEMING Elec. Light Dept., Box 466, 80728, Lester Harms, mayor, 146 met.

FORT COLLINS Light & Power Utility, Box 580, 80522, 303/221-0501, Stanley R. Case, gen. mgr. (1935); 25,609 met.; no gen.; pur. 419.9 million kwh; rev. $11,525,415.

FORT MORGAN, City of, 710 E. Railroad Ave., Box 100, 80701, 303/867-3001, Glenn W. Calvert, city supt. (1903); 5,400 met.; no gen.; pur. 90.9 million kwh; rev. $1,751,195.

FOUNTAIN Elec. Dept., 116 S. Main St., Box 158, 80817, 303/382-5604, Frank Bustamento, supt.; 6,500 met.; no gen.; pur. 56.8 million kwh; rev. $1,566,000.

FREDERICK, Town of, Box 435, 80530, 303/833-2388, Dick Easton, city mgr.; 205 met.; no gen.

GLENWOOD SPRINGS Electric Util., 806 Cooper Ave., Box 458, 81601, 303/945-6481, L. A. Blotiaux, supt.; 2,200 met.; gen. 250 kw hydro; pur. 36.4 million kwh; rev. $1,006,439.

GRANADA, Town of, 109 E. Goff St., Box 258, 81041, 303/734-5411, Thelma Schibbelnut, clerk.

GUNNISON, City of, 201 W. Virginia Ave., Box 239, 81230, 303/641-2443, G. L. Felsch, city mgr.; 2,750 met.; no gen.; pur. 38.3 million kwh; rev. $871,836.

HAXTUN Mun. Light & Power Dept., 145 S. Colorado Ave., Box 205, 80731, 303/774-6221, R. D. Orcutt, supt. (1918); 550 met.; no gen.; pur. 4.5 million kwh; rev. $76,952.

HOLLY, Town of, Box 458, 81047, 303/537-6622, Dorothy Cook, clerk; 550 met.; gen. 400 kw eng.

HOLYOKE Mun. Light Dept., 207 W. Denver, 80734, 303/854-2266, Les Lutze, city mgr.; 1,050 met.; gen. 1,000 kw eng.; pur. 12.2 million kwh.

JULESBURG Mun. Power & Light, 222 E. First St., Box 508, 80737, 303/474-3344, Melvin Mikleson, town mgr.; 900 met.; gen. 3,305 kw eng., 7.7 million kwh; pur. none; rev. $200,000.

LA JUNTA Mun. Util., Sixth and Colorado Ave., Box 630, 81050, 303/384-2546, Carmen A. Sarlo, city mgr. (1934); 3,600 met.; gen. 19,680 kw eng., 30.5 million kwh; pur. 25.1 million kwh; rev. $3,259,000.

LAMAR, Utilities Board of the City of, 100 N. Second St., 81052, 303/336-7456, Bill D. Carnahan, supt. (1919); 4,937 met.; gen. 39,000 kw, 37,000 kw steam, 2,000 kw eng., 83.6 million kwh; pur. 7.7 million kwh; rev. $3,537,807.

LAS ANIMAS Mun. Light & Power, 524 Carson Ave., Box 271, 81054, 303/456-1621, Ralph Barbee, supt. (1941); 1,900 met.; gen. 5,860 kw eng., 13.7 million kwh; pur. 7 million kwh; rev. $742,293.

LONGMONT, City of, 3rd & Kimbark Sts., 80501, 303/776-6050, Jerry Trotter, dir. utils. (1911); 18,111 met.; gen. 655 kw hydro, 7.9 million kwh; pur. 253.8 million kwh; rev. $15,729,045.

LOVELAND Light & Power Dept., 410 E. Fifth St., Box 419, 80537, 303/667-6130, Robert L. Hay, supt. (1925); 12,000 met.; no gen.; pur. 156.6 million kwh; rev. $4,100,000.

LYONS, Town of, Box 78, 80540, 303/823-6622, Carol Morres, clerk; 320 met.; no gen.

OAK CREEK, Town of, Box 128, 80467, 303/736-2422, John Yurich, town mgr.

SPRINGFIELD Mun. Util., 748 Main St., Box 4, 81073, 303/523-6524, Tommy Lithe, supt. (1949); 1,200 met.; gen. 9,142 kw eng., 7.8 million kwh; pur. 3.9 million kwh.

TRINIDAD Mun. Power & Light Dept., 135 N. Animas St., 81082, 303/846-2266, Anthony J. Schroeder, supt. (1949); 4,090 met.; gen. 11,250 kw, 7,500 kw steam, 3,750 kw eng., 23.6 million kwh; pur. 13.8 million kwh; rev. $1,660,774.

WALSENBURG Utilities, 516 Main St., 81089, 303/738-1240, Orville Flatt, dir. pub. wks.; 2,550 met.; gen. 11,000 kw steam; pur. none.

WRAY Mun. Light & Power, 245 W. Fourth St., 80758, 303/332-4431, John Courtney, city mgr. (1910); 1,500 met.; gen. 1,530 kw eng., 2,000 kwh; pur. 10.9 million kwh; rev. $251,246.

YUMA Mun. Light & Power, 221 S. Main St., 80759, 303/741-2242, Paul Metcalf, city mgr.; 1,300 met.; gen. 800 kw eng.; pur. 9.4 million kwh; rev. $161,877.

CONNECTICUT

GROTON Dept. of Util., 295 Meridian St., Box 820, 06340, 203/445-8571, William W. Clinton, dir. of utils. (1904); 11,745 met.; no gen.; pur. 499.4 million kwh; rev. $20,391,254.

JEWETT CITY Electric Light Plant, 29 Park Square, 06351, 203/376-2955, 376-2877, Joseph M. Dudek, supt. (1893); 1,777 met.; no gen; pur. 13.2 million kwh; rev. $642,250.

NORWALK THIRD TAXING DISTRICT, Electrical Dept., 2 Second St., Box 451, E. Norwalk, 06855, 203/866-9271, William J. Lyons, Jr., mgr. (1911); 3,301 met.; no gen.; pur. 45 million kwh; rev. $2,000,000.

NORWICH Dept. of Pub. Util., 34 Shetucket St., 06360, 203/887-2555, Charles F. Rossoll, elec. div. mgr. (1904); 16,569 met.; gen. 19,750 kw, 16,750 kw gas turbine, 3,000 kw hydro, 17.4 million kwh; pur. 211.6 million kwh; rev. $10,918,959.

SOUTH NORWALK Elec. Works, State St., Box 400, 06856, 203/866-3366, August R. DiStasi, supt. (1892); 4,852 met.; gen. 15,280 kw eng., 5.1 million kwh; pur. 53.5 million kwh; rev. $3,271,121.

WALLINGFORD Elec. Div., Dept. of Public Util., 100 John St., Box 190, 06492, 203/265-1593, Charles F. Walters, gen. mgr. (1899); 15,964 met.; gen. 22,500 kw steam, 19.1 million kwh; pur. 396.1 million kwh; rev. $15,481,516.

DELAWARE

CLAYTON Mun. Light & Power, 314 Main St., 19938, James H. Carson, Jr., Council pres., 590 met.; pur. 4,570,000 kwh; rev. $217,272.

DOVER, City of, Box 475, 19901, 302/678-0847, Robert L. Schucker, elec. mgr. (1902); 13,944 met.; gen. 144,000 kw, 143,500 kw steam, 500 kw eng., 450 million kwh; pur. 108 million kwh; rev. $27,541,392.

LEWES Board of Public Works, E. Third St., Box 518, 19958, 302/645-6228 -6229, Jay A. Collars, gen. mgr. (1901); 1,300 met.; pur. 37.9 million kwh.

MIDDLETOWN Mun. Light and Water Dept., 216 N. Broad St., 19709, Charles E. Schreppler, mayor; no gen.

MILFORD, City of, 201 S. Walnut St., 19963, 302/422-6616, Ralph A. Clark, city mgr. (1918); 3,500 met.; no gen.; rev. $5,100,000.

NEWARK, City of, Box 390, 19711, 302/366-7050, Peter S. Marshall, city mgr. (1888); 7,480 met.; no gen.; pur. 172.2 million kwh; rev. $9,178,798.

NEW CASTLE Board of Water & Light Comm., 216 Chestnut St., P.O. Box 208, 19720, 302/328-5758, Edward J. Murphy, secy., (1921); 2,008 met., no gen.; pur. 17.2 million kwh; rev. $1,122,435.

SEAFORD Light and Power Dept., 19973, Woodrow W. Crosby, city mgr.; 2,364 met.; gen. 7,302 kw eng.; pur. 41 million kwh; rev. $1,786,636.

SMYRNA, Town of, 107 S. Main St., 19977, 302/653-9231, Harry M. Odren, town mgr., 1,930 met.; no gen.; pur. 33.2 million kwh., rev. $1,738,730.

FLORIDA

ALACHUA, City of, Box 8, 32615, 904/462-1231, George Stevens, city mgr.; 854 met.; no gen.; pur. 19 million kwh; rev. $734,914.

BARTOW City Electric Dept., 250 N. Central Ave., Box 1669, 33830, 813/533-0911, James R. O'Connor, city mgr. (1901); 7,612 met.; no gen.; pur. 145.6 million kwh; rev. $4,756,545.

BLOUNTSTOWN Mun. Electric Dept., 125 W. Central Ave., 23424, 904/674-5488, Grant Gentry, city mgr. (1903); 1,190 met.; no gen.; pur. 18.2 million kwh; rev. $490,121.

BUSHNELL Utility Dept., Box 115, 33513, 904/793-2591, Lehman Shaw, supt.; 375 met.; no gen.; pur. 9.3 million kwh; rev. $269,647.

CHATTAHOOCHEE, City of, City Hall, Box 188, 32324, 904/663-4475, Clyde Hopkins, supt. (1915); 1,200 met.; no gen.; pur. 18 million kwh; rev. $750,000.

CLEWISTON, City of, Box 698, 33440, 813/983-9191, C. F. Blair, city mgr. (1942); 3,148 met.; no gen.; pur. 70.4 million kwh; rev. $3,290,941.

FORT MEADE Electric Dept., Box 856, 33841, 813/285-8191, Everett B. Howe, city mgr.; 1,946 met.; no gen.; pur. 24.3 million kwh; rev. $1,040,640.

FORT PIERCE Utilities Authority, Box 3191, 33452, 305/464-5600, Ewell E. Menge, dir. util. (1911); 20,500 met.; gen. 120 mw, 115 mw steam, 5 mw eng., 295,921 mwh; pur. 298,442 mwh; rev. $25,975,705.

GAINESVILLE REGIONAL UTILITIES, 200 E. University Ave., P. O. Box 490, Gainesville 32602, 904/374-2811, Richard L. Hester, deputy city mgr. of util. (1912); 40,860 met.; gen. 263,800 kw, 168,400 kw steam, 82,800 kw gas turbine, 1,000 kw eng., 11,600 kw nuclear, 980.5 million kwh; pur. 10.7 million kwh; rev. $46,016,000.

GREEN COVE SPRINGS, City of, 229 Walnut St., 32043, 904/284-5621; William Vermilling, city mgr. (1885); 1,976 met.; no gen.; pur. 2.2 millon kwh; rev. $2,644,147.

HAVANA Power & Light, Box 1068, 32333, 904/539-6493, Cecil G. Trippe, city mgr.; 1,101 met.; no gen.; pur. 10.7 million kwh; rev. $614,807.

HOMESTEAD, City of, 790 N. Homestead Blvd., 33037, 305/247-1801, Henry C. Peters, Jr., dir. of util. (1926); 12,000 met.; gen. 49,710 kw eng., 112.6 million kwh; pur. 77.5 million kwh; rev. $9,370,048.

JACKSONVILLE Elec. Authority, 233 W. Duval St., 32202, 904/633-4958, Royce Lyles, mg. dir., (1895); 222,398 met.; gen. 2,047,000 kw, 1,553,000 kw steam, 494,000 kw gas turbine, 5,529.4 million kwh; pur. 629.4 million kwh; rev. $274,298,413.

JACKSONVILLE BEACH Dept. of Elec. Utils., 11 N. Third St., Box 51389, 32250, 904/249-2381, ext. 45, Keith Roberts, dir. elec. util. (1908); 13,006 met.; no gen.; pur. 229.5 million kwh; rev. $13,108,129.

KEY WEST Utility Board, 535 Eaton St., Drawer 1060, 33040, 305/294-5272, Joht T. Doughtry, mgr. (1945); 16,100 met.; gen. 110,800 kw, 97,000 kw steam, 13,800 kw eng., 357.4 million kwh; pur. none; rev. $16,300,000.

KISSIMMEE, City of, 112 Ruby Ave., Box 340, 32741, 305/847-2821, Joe C. David, util. dir. (1901); 10,685 met.; gen. 23,350 kw eng., 117.7 million kwh; pur. 78.2 million kwh; rev. $7,939,755.

LAKE HELEN Mun. Electric Light Plant, Box 423, 32744, 904/228-2121, James Fawcett, supt. (1914); 900 met.; no gen.; pur. 8.8 million kwh; rev. $380,000.

LAKELAND Dept. of Electric & Water Util., Box 368, 33802, 813/682-1121, William Lesnett, dir. (1904); 59,526 met.; gen. 388,600 kw, 315,500 kw steam, 67,600 kw gas turbine, 5,500 kw eng., 1,210.5 million kwh; pur. 37.3 million kwh; rev. $66,335,372.

LAKE WORTH Utilities Authority, 114 College St., 33460, 305/585-2571, Larry Robbins, util. dir. (1914); 24,300 met.; gen. 144,800 kw, 74,000 kw steam, 30,800 kw gas turbine, 10,000 kw eng., 30,000 kw combined cycle; 265 million kwh; rev. $10,920,000.

LEESBURG, City of, 223 S. Box 630, 32748, 904/787-4313 Joe M. Tardugno, supt. of elec., Calvin E. Glidewell, city mgr., (1926); 17,733 met.; gen. 6,800 nuclear; 58.6 million kwh; pur. 158.1 million kwh; rev. $11,178,391.

MOORE HAVEN Mun. Water & Light Dept., Box 399, 33471, 813/946-0711, Jack Smith, supt., elec. dept., 800 met.; no gen.; rev. $246,276.

MOUNT DORA, City of, Box 176, 32757, 904/383-4221, Cecil Barks, dir. of util.; 3,262 met.; no gen.; pur. 51.7 million kwh; rev. $965,273.

NEWBERRY Board of Public Works, Box 368, 32669, 904/472-2161, John W. Caldwell, supt.; 545 met.; no gen.; pur. 10.4 million kwh; rev. $269,337.

NEW SMYRNA BEACH Util. Comm., 120 Sams Ave., Box 519, 32069, 904/427-1361, B. W. Wait, III, dir (1922); 10,100 met.; gen. 15,600 kw, 8,100 kw eng., 7,500 steam, 68.7 million kwh; pur. 60.8 million kwh; rev. $5,681,730.

OCALA, City of, Box 1270, 32670, 904/629-8431, Dean G. Shaw, dir. of elec. util. (1894); 25,445 met.; gen. 11,000 kw nuclear, 94.8 million kwh; pur. 379.5 million kwh; rev. $24,927,031.

ORLANDO Utilities Comm., Box 3193, 32802, 305/423-9100, Curtis H. Stanton, exec. vice pres. (1923); 88,305 met.; gen. 740,000 kw, 700,000 kw steam, 26,000 kw gas turbine, 13,000 kw nuclear; 1,000 kw diesel; 2,942.3 million kwh; pur. 26 million kwh; rev. $122,568,769.

QUINCY Mun. Electric Light & Water Dept., Drawer 941, 32351, 904/627-7681, William F. Johnson, city mgr.; 4,041 met.; no gen.; pur. 20.6 million kwh; rev. $2,375,948.

ST. CLOUD Municipal Utilities, 1300 Ninth St., 32769, 305/892-2161, E. C. Somers, dir of utils. (1916); 6,948 met.; gen. 27,000 kw eng., 67.4 million kwh; pur. 28.6 million kwh; rev. $4,963,791.

SEBRING Utilities Comm., 386 S. Commerce Ave., 33879, 813/385-0191, James H. Phillips, gen. mgr.; 5,470 met.; gen. 24,500 kw, 12,500 kw steam, 12,000 kw eng., 39.3 million kwh; pur. 30 million kwh; rev. $3,148,034.

STARKE Light & Water Plant, 209 N. Thompson St., Drawer C, 32091, 904/964-5027, Merrell Dees supt, (1890); 2,000 met.; gen. 10,790 kw eng., 34 million kwh; pur. none; rev. $1,229,000.

TALLAHASSEE, City of, 2602 Jackson Bluff Rd., 32303, 904/576-1171, Kenneth W. Morgan, dir. elec. dept. (1902); 54,634 met.; gen. 434,511 kw, 378,000 kw steam, 56,500 kw gas turbine, 11,000 kw nuclear, 1,630.4 million kwh; pur. 5.7 million kwh; rev. $58,411,337.

VERO BEACH, City of, Municipal Utils., 1053 Twentieth Place, 32960, 305/567-5151, John V. Little, city

mgr./util. dir., (1919); 17,256 met.; gen. 130,200 kw, 118,000 kw steam, 12,200 kw eng., 398.5 million kwh; pur. 22.6 million kwh; rev. $20,354,000.

WAUCHULA Mun. Light & Water Dept., Box 818, 33873, 813/773-3131, Jerry Conerly, city admin. (1924); 2,099 met.; gen. 7,656 kw eng., 3.8 million kwh; pur. 34.2 million kwh; rev. $1,331,676.

WILLISTON Mun. Electric Dept., Box 160, 32696, 904/528-4251, Donald J. Tanner, supt., 1,000 met.; no gen.; pur. 13.2 million kwh.

GEORGIA

ACWORTH Water & Light Comm., 30101, Joseph Griffis, supt.; no gen.; pur. 22.6 million kwh.

ADEL Lighting Dept., 112 N. Parish Ave., 31620, Harwell Sutton, mgr.; no gen.; pur. 66 million kwh.

ALBANY Water, Gas & Light Comm., 207 Pine Ave., Box 1788, 31703, 912/883-8330, U. W. Rodemann, gen. mgr. (1900); 32,000 met.; no gen.; pur. 709.4 million kwh; rev. $23,927,449.

BARNESVILLE, City of, City Hall, 109 Forsythe St., Box 187, 30204, 404/358-0181, Ralph S. Barron, city supt., (1893); 2,512 met.; no gen.; pur. 25.3 million kwh; rev. $1,005,000.

BLAKELY Water & Light Dept., Box 350, 31723, 912/723-3677, Clarence H. Bryant, city admin., (1917); 2,304 met.; rev. $1,627,600.

BRINSON, City of, City Hall, 31725, Z. H. Bridges, mayor; no gen.; pur. 1.3 million kwh.

BUFORD Mun. Lighting System, 30518, Bobby Kerlin, city mgr.; no gen.; pur. 23.6 million kwh.

CAIRO Light & Water Dept., 31728 John W. Walker, city mgr.; no gen.; pur. 80.4 million kwh.

CALHOUN Light Dept., City Hall, Box 924, 30701, 404/629-2276, Jack H. Bell, supt.; no gen.; pur. 98.4 million kwh; rev. $2,635,000.

CAMILLA, City of, Box 328, 31730; 912/336-5636, Ron H. Rabun, city mgr. (1905); 2,300 met.; no gen.; pur. 1.0 million kwh; rev. $1,645,899.

CARTERSVILLE Electric System, Box 529, 30120, 404/382-1171, Ralph L. Oglesby, supt. (1905); 7,300 met.; no gen.; pur. 223.8 million kwh; rev. $6,940,551.

CHICKAMAUGA Elec. System, Box 68, 30707, 404/375-3177, John Culpepper, mgr. (1963); 722 met.; no gen.; pur. 43.7 million kwh; rev. $768,153. (TVA power distributor.)

COLLEGE PARK, City of, 1886 W. Harvard Ave., 30337, 404/761-5273, Robert W. Dudley, elec. dept. dir.; 10,000 met.; no gen.; pur. 202.1 million kwh. rev. $6,190,890.

COMMERCE Water & Light Comm., Box 348, 30529, Paul Vickery, dir. operations; no gen.; pur. 33.8 million kwh.

COVINGTON Mun. Water & Light Dept., 30209, Frank B. Turner, city mgr.; 4,400 met.; no gen.; pur. 107.9 million kwh.

CRISP COUNTY POWER COMMISSION, Box 489, Cordele, 31015, 912/273-3811, Frank L. Olson, mgr. (1930); 8,938 met.; gen. 30,500 kw, 12,500 kw steam, 5,000 kw gas turbine, 13,000 kw hydro, 61.7 million kwh; pur. 132.8 million kwh; rev. $5,623,541.

DALTON Water, Light & Sinking Fund Commission, Box 869, 30720, 404/278-1313, V. D. Parrott, Jr., pres. (1890); 10,000 met.; no gen.; pur. 554 million kwh; rev. $18,500,000.

DOERUN Water & Light Plant, 31744, 912/782-5444, J. B. Walters supt. (1911); 470 met.; no gen.; pur. 5.4 million kwh.

DOUGLAS Water & Light Comm., Drawer 470, 31533, 912/384-1695, Joe Glen Solomon, supt. (1905); 4,464 met.; no gen.; pur. 104.8 million kwh; rev. $3,944,002.

EAST POINT Electric Utils. Dept., 2777 East Point St., 30344, 404/765-1026-27, C. D. Andersen, dir.; 14,500 met.; no gen.; pur. 288.1 million kwh; rev. $9,750,604.

ELBERTON Electric Util., 234 N. McIntosh St., 30635, 404/283-2575, J. N. Jackson, supt. (1895); 3,928 met.; no gen.; pur. 73.2 million kwh; rev $2,465,400.

ELLAVILLE Mun. Electric Light Plant, 31806, Virginia R. Whaley, city clerk; no gen.; pur. 10.1 million kwh.

FAIRBURN Light & Water Plant, 30213, Alex Howell, Sr., city admin.; 1,100 met.; no gen.; pur. 21.5 million kwh.

FITZGERALD Water, Light & Bond Commission, City Hall, Drawer F, 31750, 912/423-2016, James H. Smith, supt. (1903); 4,876 met., no gen.; pur. 106.5 million kwh; rev. $3,382,689.

FORSYTH, City of, 31029, Guy F. Walker, supt.; no gen.; pur. 38.6 million kwh.

FORT VALLEY Util. Comm., 400 Anthoine St., Box 529, 31030, 912/825-7701, Fred J. Sankey, dir. (1905); 3,963 met.; no gen.; pur. 72.6 million kwh; rev. $2,406,440.

GRANTVILLE Water & Light Comm., 30220, 404/583-2289, Weyman Jenkins, city clerk; 500 met.; no gen.; pur. 3.9 million kwh.

GRIFFIN, City of, Elec. Dept., Box 797, 30224, 404/227-2213, Clifford B. Hutson, dir.; (1895) 11,242 met.; no gen.; pur. 176.3 million kwh; rev. $6,398,648.

HAMPTON Electric Dept., 30228, Glenn Mitchell, mayor; no gen.; pur. 8 million kwh.

HOGANVILLE Mun. Light Plant, 103 Main St., 30230, David Street, supt.; no gen.; pur. 13.7 million kwh.

JACKSON Electric Dept., Box 12, 30233, S. V. Lunsford, dept. supt.; no gen.; pur. 22.8 million kwh.

LA FAYETTE Mun. Electric Dept., City Hall, Box 89, 30728, Grady McCalmon, city mgr.; no gen.; pur. 74.4 million kwh.

LA GRANGE, City of, Box 430, 30241, 404/884-7233, C. W. Hughes, Jr., dir. util.; 9,905 met.; no gen.; pur. 20.9 million kwh; rev. $7,779,080.

LAWRENCEVILLE Mun. Light System, 311 Buford Drive, 30245, Don Martin, city engr.; no gen.; pur. 66.4 million kwh.

MANSFIELD Electric Dept., 30255, 404/786-7235, J. Dean Milton, mayor; 180 met.; no gen.; pur. 2.4 million kwh.

MARIETTA Board of Lights & Water, 205 Lawrence St., 30060, 404/429-4246, Jack Crane, city mgr. (1903).

MONROE Water, Light & Gas Comm., Box 725, 30655, 404/267-5756, John T. Briscoe, Jr., supt. (1905); 3,615 met.; no gen.; pur. 67.3 million kwh; rev. $2,058,437.

MONTICELLO Electric Dept., 31064, G. Roscoe Benton, supt.; no gen.; pur. 14.4 million kwh.

MOULTRIE, City of, Box 580, 31768, 912/985-6710, H. J. (Ike) Collins, util. dir.; 6,289 met.; no gen.; pur. 241.9 million kwh.

NEWNAN Water & Light Comm., 70 Sewell Rd., Box 578,, 30263, 404/253-5516, Carl G. Miller, gen. mgr. (1904); 4,814 met.; no gen.; pur. 68.4 million kwh; rev. $3,643,059.

NORCROSS, City of, 30071, Doug Wood, elec. supt.; no gen.; pur. 23.1 million kwh.

OXFORD Water & Light System, 30267, C. A. Burnett, supt.; no gen.

PALMETTO Light & Water Dept., 30268; no gen.; pur. 11.1 million kwh.

QUITMAN Electric Dept., 31643, J. P. Griffin, supt.; no gen.; pur. 33.8 million kwh.

SANDERSVILLE, City of, Electric Dept., P. O. Box 71, 912/552-2525, C. C. Wright, supt.; 2,000 met.; no gen.; pur. 40 million kwh.

SYLVANIA, City of, Box 555, 30467, 912/564-7411, E. K. Overstreet, city mgr. (1910); 1,800 met.; no gen.; pur. 96 million kwh; rev. $2,940,000.

SYLVESTER Water & Light Plant, Box 368, 31791, 912/776-3941, Charles Jones, supt. (1903); 2,500 met.; no gen.; pur. 48.7 million kwh; rev. $1,800,000.

THOMASTON Water & Light Dept., Box 672, 30286, 404/647-6633, Horace D. Dorsey, city mgr.; 4,100 met.; no gen.; pur. 57.6 million kwh.

THOMASVILLE Water & Light Dept., 411 W. Jackson St., P.O. Box 1397, 31792, 912/226-3518, John B. Smith, gen. supt. (1906); 10,569 met.; no gen.; pur. 270.6 million kwh; rev. $9,564,480.

WASHINGTON Electric Dept., Box 9, 30673, 404/678-3277, L. W. Hardy, supt. (1897); 2,040 met.; no gen.; pur. 63.4 million kwh; rev. $1,900,000.

WEST POINT, City of, Box 487, 31833, 404/645-2226, John F. Meaders, admin.; 1,559 met.; no gen.; pur. 26.1 million kwh; rev. $853,843.

WHIGHAM Electric Dept., Box 71, 31797, Cecil Gibbs, Jr., supt.; 180 met.; no gen.; pur. 4 million kwh.

IDAHO

ALBION Light & Water Plant, Box 177, 83311, 208/673-5351, H.W. Chris Cagle, mayor (1916); 158 met.; no gen.; pur. 3 million kwh; rev. $30,000.

BONNERS FERRY Light and Water Dept., Box 149, 83805, 208/267-3105, Roy A. Jones, supt. of public works (1922); 1,887 met.; gen. 4,890 kw, 2,450 kw hydro, 2,440 kw eng., 21.4 million kwh; pur. 42.7 million kwh; rev. $649,267.

BURLEY, City of, 2020 Park Ave., 83318, 208/678-2538, Donald R. Hill supt.; 4,402 met.; no gen.; pur. 96.6 million kwh; rev. $2,200,000.

DELCO Mun. Electric Dept., Box 141, 83323, Dean Saxton, mgr. (1910); 104 met.; no gen.; pur. 1.6 million kwh.

DUBOIS Electric System, Box 27, 83423, 208/374-5241, Warner P. Hoopes, supt. (1919); 205 met.; no gen.; pur. 2 million kwh.

HEYBURN Light & Power Dept., Box 586, 83336, 208/678-8158, Larry Burbank, supt. (1920); 835 met.; no gen.; pur. 61 million kwh; rev. $415,000.

IDAHO FALLS Electric Div., 308 C St., Box 220, 83401, 208/529-1430, G. Steve Harrison, mgr. (1900); 17,500 met.; no gen., 412.9 million

kwh; pur. 347.7 million kwh; rev. $6,149,151.

MINIDOKA, City of, 83343, Deon Fassett, clerk (1924); 55 met.; no gen.; pur. 1 million kwh.

PLUMMER Electric Dept., 83851, 208/686-1422, W. T. Neibuhr, mgr. (1916); 500 met.; no gen.; pur. 9 million kwh.

RUPERT, City of, Civic Bldg., Box 426, 83350, 208/436-9608, Elmer V. Schenk, mgr.; 2,299 met.; no gen; pur. 60 million kwh; rev. $500,000.

SODA SPRINGS Mun. Power & Light, 9 W. Second St., 83276, 208/547-2151, John C. Darrington, city admin. (1908); 1,400 met.; gen. 580 kw hydro, 2.3 million kwh; pur. 19 million kwh; rev. $856,000.

WEISER, City of, 55 W. Idaho St., 83672, 208/549-1965, Keith Herrick, supt. (1908); 2,047 met.; no gen.; pur. 27 million kwh; rev. $350,701.

WORLEY, City of, 83876, 208/686-1258, Sally A. Holt, city clerk; 104 met.; no gen.

ILLINOIS

ALBANY Electric Dept., Box 356, 61230, 309/887-4901, Gary Gooch, supt.; 383 met.; no gen.; pur. 2.7 million kwh; rev. $69,700.

ALLENDALE Municipal Util., Box 85, 62410, 618/299-3181, Robert K. Kight, supt. (1949); 275 met.; no gen.; pur 2.5 million kwh; rev. $138,000.

ALTAMONT Mun. Electric Light Plant, 601 W. Madison Ave., 62411, 618/483-5108, Dallas Fairley, supt.; 870 met.; gen. 3,800 kw eng.; rev. $246,616.

BATAVIA, City of, 101 N. Island Ave., 60510, 312/879-1424, Ronald Podschweit, controller; 4,257 met.; no gen.; pur. 69.6 million kwh; rev. $2,163,607.

BETHANY Mun. Light & Power, Box 352, 61914, 217/655-3351, Frank Roby, Jr., supt. (1916); 580 met.; no gen.; pur. 5.5 million kwh; rev. $171,936.

BREESE Water & Light Dept., 800 N. First St., 62230, 618/526-7151, Martin F. Johnson, supt. of utilities, (1906); 1,430 met.; gen. 5,900 kw, 3,900 kw eng., 2,000 kw steam, 2.7 million kwh; pur. 17.7 million kwh; rev. $861,416.

BUSHNELL Mun. Electric Light & Power Util., 431 W. Main St., 61422, Bert L. Sammons, supt.; 1,162 met.; gen. 3,150 kw eng.; rev. $320,168.

CAIRO Public Utility Commission, 1100 Commercial Ave., 62914, 618/734-3200, Roy V. Collins, mgr. (1947); 2,838 met.; no gen.; pur. 79.1 million kwh; rev. $2,726,101.

CARLYLE Mun. Util., 550 First St., 62231, 618/594-3321, Edward H. Kleber, supt. (1901); 1,462 met.; gen. 9,000 kw, 3,000 kw steam, 6,000 kw eng., 709,000 kwh; pur. 21.5 million kwh; rev. $1,447,806.

CARMI City Water Light & Power Dept., 227 Main St., 62821, 618/382-5611, Lawrence E. Martin, city supt.; 3,200 met.; gen. 16,661 kw eng., 31.8 million kwh; pur. none; rev. $814,209.

CASEY, City of, City Hall, Box 425, 62420, 217/932-4885, Ray Mitchell, supt.; 1,751 met.; no gen.; pur. 18.3 million kwh; rev. $443,703.

CHATHAM Mun. Elec. Light Plant, 117 E. Mulberry, 62629, Tony Moore, supt. (1942); 1,300 met.; no gen.; pur. 12 million kwh; rev. $250,000.

FAIRFIELD Mun. Light Plant, N.W. 6th St., 62837, 618/842-4821, Claude Trotter, supt., (1898); 3,322 met.; gen. 7,500 kw, 12,500 kw steam, 7,500 kw eng., 2.5 million kwh; pur. 2.5 million kwh; rev. $2,342,868.

FARMER CITY, City of, cor. of Allen & Center St., 61842, 309/928-6432, Harold Miller, supt. (1895): 1,145 met.; gen. 7,550 kw eng., 11.5 million kwh; pur. none; rev. $806,926.

FLORA Mun. Light Plant, Box 98, 62839, Harold Hemphill, supt.

FREEBURG Mun. Light Plant, 101 S. Bellville St., 62243, 618/539-3112, Donald Harris, supt.; 880 met.; rev. $281,571.

GENESEO Mun. Elec. Light and Power Util., 433 E. North St., 61254, 309/944-2617, Tom Gorman, supt. (1933); 3,000 met.; gen. 19,500 kw eng., 18 million kwh; pur. 24 million kwh; rev. $2,200,000.

GENEVA Mun. Elec. System, 2 W. State St., 60134, 312/232-1503, Reginald Fellhauer, dir. (1894); 4,300 met.; no gen.; pur. 105.1 million kwh; rev. $5,049,000.

GREENUP Light & Power Dept., 62428, John D. Carr, supt. (1954); 806 met.; no gen.; pur. 5.2 million kwh; rev. $131,925.

HIGHLAND Light & Power Dept., 1115 Broadway, 62249, 618/654-9891, W. Mike Herron, supt.; 3,771 met.; gen. 12,500 kw eng., 10.1 million kwh; pur. 54.5 million kwh; rev. $2,808,536.

LADD Electric Light Dept., 126 N. Main St., 61329, Clarence Foster, supt.

MARSHALL, City of, 708 Archer Ave., Box 298, 62441, 217/826-2112, Larry Mitchell, supt.; 1,528 met.; gen. 5,606 kw eng.; rev. $459,751.

MASCOUTAH Power & Light Dept., 40 W. Union, 62258, 618/566-2963-62, D. L. Sitton, city mgr.; 2,053 met.; 6,575 kw eng., 1.6 million kwh; pur. 22 million kwh, rev. $833,386.

McLEANSBORO Mun. Light & Water Plant, 62859, William Campbell, supt., 102 W. Main; 1,490 met.; gen. 4,800 kw, 750 kw steam, 4,050 kw eng., 3 million kwh; pur. 10.3 million kwh.

METROPOLIS City Utilities, City Hall, 106 W. Fifth St., 62960, Jack Rushing, supt.

NAPERVILLE Electric Dept., 175 W. Jackson Ave., 60566, 312/420-6181, Victor Marma, dir. elec. utils. (1899); 15,266 met.; no gen.; pur. 287.8 million kwh; rev. $13,426,726.

NEWTON Light & Water Works, 108 N. Van Buren, 62448, 618/783-8451, Jim Yates, mayor (1965); 1,468 met.; no gen.; pur. 21.3 million kwh; rev. $726,665.

OGLESBY, City of, 128 W. Walnut St., 61348, 815/883-9380, C. S. Graglia, util. supt. (1910); 1,697 met.; no gen.; pur. 15.3 million kwh; rev. $380,815.

PERU Light Department, City Hall, 1415 Water St., 61354, 815/223-0044, Donald Baker, mayor (1892); 4,300 met; gen. 33,000 kw, 15,250 kw steam, 11,500 kw gas turbine, 6,250 kw eng., 58 million kwh; pur. none; rev. $2,700,000.

PRINCETON Municipal Utilities, City Hall, 2 S. Main St., 61356, 815/872-5551, Ben L. Huffstodt, mgr. (1900); 3,800 met.; gen. 38,000 kw eng., 31.6 million kwh; pur. 34.5 million kwh; rev. $2,916,165.

RANTOUL, Village of, Light & Power Dept., 200 W. Grove St., 61866, 217/892-2178, Glenn E. Tadlock, supt. (1898); 4,738 met.; gen. 16,800 kw gas turbine; 638,010 kwh; pur. 69.9 million kwh; rev. $2,859,597.

RED BUD, City of, Utilities, 525 Power St., 62278, 618/282-3339, Leo J. Roscow, supt. (1904); 1,267 met.; gen. 10,312 kw eng., 19.2 million kwh; pur. 8.6 million kwh., rev. $1,049,620.

RIVERTON Electric Light Dept., 62561, William Herman, supt.; no gen., rev. $181,769.

ROCHELLE Electric Dept., 120 N. Seventh St., 61068, 815/562-4155, Theodore W. Volding, gen. supt. (1893); 5,400 met.; gen. 31,000 kw, 12,000 kw steam, 19,000 kw eng., 64.7 million kwh; pur. 64.5 million kwh; rev. $4,722,188.

ROCK FALLS, City of, Electrical Dept., 1007 Seventh Ave., Box 578, 61071, 815/625-0949, Robert O'Donnell, dir. (1908); 5,015 met.; no gen.; pur. 63.1 million kwh; rev. $3,276,749.

ROODHOUSE Mun. Power & Light, 119 W. Palm, 62082, Russell E. Hillman, mayor; 802 met.; gen. 1,470 kw eng.

ST. CHARLES Electric Util., 2 E. Main St., 60174, 312/377-4407, Patrick J. Boyle, dir. (1891); 7,119 met.; no gen.; pur. 189.9 million kwh; rev. $4,775,210.

SPRINGFIELD City Water, Light & Power, 207 Municipal Bldg., 62701, 217/789-2060, Paul Bonansinga, comm. public property, (1906); 51,555 met.; gen. 557,200 kw, 516,200 kw steam, 41,000 kw gas turbine, 1,279.6 million kwh; pur. 94.7 million kwh; rev. $40,795,414.

SULLIVAN, City of, Mun. Utils., 2 W. Harrison St., 61951, 217/728-7622, Bill Harris, supt. elec. dept. (1917); 2,284 met.; gen. 15,475 kw eng., 29.2 million kwh; pur. 6.4 million kwh; rev. $1,396,681.

WATERLOO Light & Power, 104 W. Fourth St., 62298, 618/939-8661, Virgil Bush, supt. (1900); 2,007 met.; gen. 11,448 kw eng., 8.2 million kwh; pur. 17.1 million kwh; rev. $1,207,192.

WINNETKA, Village of, Water & Elec. Dept., 510 Green Bay Rd., 60093, 312/446-2500, Gary L. Zimmerman, supt. (1900); 5,315 met.; gen. 30,780 kw; 25,500 kw steam; 5,280 kw eng.; 2.4 million kwh; pur. 75.7 million kwh; rev. $4,252,460.

INDIANA

ADVANCE Mun. Light & Power Utility, Box 8, 46102, 317/329-3411; Ralph Caldwell, supt.; 257 met.; no gen.; pur. 1.9 million kwh; rev. $45,456.

ANDERSON Mun. Light & Power, 550 Baxter Rd., 46011, 317/646-5741, Maris D. Hall, supt., (1897); 33,016 met.; no gen.; pur. 515.7 million kwh; rev. $18,725,231.

ARGOS Mun. Light & Water Dept., 119 W. Walnut St., 46501, 219/892-5416, Wilmer Harley, supt.; 650 met.; no gen.

AUBURN Elec. & Water Co., Cedar & Ninth Sts., 46706, 219/925-0365, Clyde James, elec. supt. (1900); 3,962 met.; no gen.; pur. 151 million kwh; rev. $4,778,244.

AVILLA Elec. Dept., 117-21 S. Main St., 46710, 219/897-3651, Paul Bolinger, supt.; 398 met.; no gen.; pur. 2.5 million kwh.

BAINBRIDGE Electric System, Box 216, 46105, 317/522-6238, James Nelson, supt.; 315 met.; no gen.; pur. 2.9 million kwh; rev. $77,000.

BARGERSVILLE Power & Light, 46106, 317/849-7097, Joe M. Harrod, supt.; 943 met.

BLUFFTON Utilities, Elec. & Water Depts., 128 E. Market St., 46714, 219/824-2500, Edward C. Davis, supt. (1889); 4,000 met.; gen. 5,000 kw eng., 1.2 million kwh; pur. 93.7 million kwh; rev. $3,000,000.

BOONEVILLE Mun. Electric Plant, 113 S. Second St., 47601, 812/897-0140, Charles Davis, supt.; 1,700 met.; no gen.; rev. $484,277.

BREMEN Electric Light & Power Co., 123 S. Center St., 46506, 219/546-4324, Dudley A. Keyser, supt. (1895); 1,738 met.; no gen.; pur. 43 million kwh; rev. $1,801,584.

BROOKLYN Mun. Util., 46111, 317/831-3343, Howard Elvan, supt.; 270 met.; no gen.

BROOKSTON Mun. Light Dept., 47923, 317/563-3171, Charles L. Fountain, Supt.; no gen.; pur. 5 million kwh.

CANNELTON Utilities, 610 Washington St., 47520, 812/247-4861, Orin Curl, gen. mgr.; 1,075 met.; no gen.; pur. 14 million kwh.

CENTERVILLE Mun. Electric Light & Power Dept., Box 307, 47330, 317/855-2191, James Bowen, supt.; 1,000 met.; no gen.; pur. 12 million kwh.

CHALMERS Mun. Electric Dept., 47929, 219/984-5494, Perry Hughes, supt.

COATESVILLE Mun. Light & Power Dept., 46121, 317/386-7490, James Rollings, supt.; 251 met.; no gen.; pur. 1.8 million kwh.

COLUMBIA CITY Mun. Electric Dept., City Hall, S. Chauncey St., 46725, 219/244-5141, Gene Sheets, foreman (1895); 3,297 met.; no gen.; pur. 64.7 million kwh; rev. $1,336,138.

COVINGTON Light and Water Works, 413 Washington St., 47932, 317/793-2134, Richard Christiansen, supt. (1913); 1,383 met.; no gen.; pur. 16 million kwh; rev. $343,398.

CRAWFORDSVILLE Electric Light & Power, 300 E. Pike, City Building, Box 428, 47933, 317/362-1900, Roy E. Kaser, mgr. (1892); 7,650 met.; gen. 22,300 kw steam, 61.8 million kwh; pur. 144.7 million kwh; rev. $6,514,987.

DARLINGTON Light & Power Co., 104 S. Franklin St., 47940, 317/794-4496, Wesley D. Tribbett, supt. (1919); 540 met.; no gen.; pur. 8.4 million kwh; rev. $265,856.

DUBLIN Mun. Electric Light System, P.O. Box 145, 47335, 317/478-4878, Monica V. Davis, clerk-treas. (1920); 450 met.; no gen.; pur. 4.1 million kwh; rev. $3,544,051.

DUNREITH Elec. Light Dept., 47337, 317/987-7641, Mrs. Thomas Ratcliff, clerk, Bd. of Pub. Wks.; 175 met.

EDINBURGH Water & Light Dept., 107 S. Holland, 46124, 812/526-6333, Ralph Alvis, supt. (1898); 2,100 met.; no gen.; pur. 44.7 million kwh; rev. $1,229,500.

ETNA GREEN Electric Light Dept., 46524, 219/387-3835, William Price, supt.; 200 met.; no gen.

FERDINAND Mun. Light Plant, 123 W. Fifth St., Box 7, 47532, 812/367-1011, James Meyer, supt. (1922); 608 met.; no gen; pur. 10.5 million kwh; rev. $223,628.

FLORA Electric Util., 10 N. Center St., Box 158, 46929, 219/967-3023, Merritt Hardt, util. mgr., (1946); 1,100 met.; no gen.; pur. 20.3 million kwh; rev. $733,897.

FORT WAYNE City Utilities. **(Lease to Indiana & Michigan Power Co. approved May, 1974.)**

FRANKFORT City Light & Power, 16 N. Main St., 46041, 317/659-3362, L. Jackson Lipp, supt. (1902); 8,350 met.; pur. 170 million kwh; rev. $5,846,902.

FRANKTON Mun. Water & Light, Box 421, 46044, 317/754-7103, Dale Swaim, supt.; 600 met.; no gen.; pur. 6 million kwh.

GARRETT Mun. Utilities, S. Randolph St., 46738, 219/357-4400, William Rex Frain, supt. (1896); 2,250 met.; no gen.; pur. 34.9 million kwh; rev. $721,937.

GAS CITY Light Dept., 211 E. Main, 46933, 317/674-5660, Ted Stichler, util. engr. (1892); 2,500 met.; no gen.; pur. 32.6 million kwh; rev. $1,192,986.

GREENDALE Utilities, 510 Ridge Ave., Lawrenceburg, 47025, 812/537-2125, F. R. Rudolph, supt.; 1,619 met.; no gen.; pur. 75.6 million kwh; rev. $1,243,633.

GREENFIELD Mun. Light & Power Dept., S. Riley Ave., 46140, 317/462-4402, Dick Towne, supt.; 3,800 met.; no gen.; pur. 32 million kwh.

HAGERSTOWN Mun. Light Dept., 49 E. College St., 47346, 317/489-4322, Ron Roach, supt. (1923); 1,200 met.; no gen.; pur. 17 million kwh.

HUNTINGBURG Mun. Light & Water Plant, 511 Fourth St., 47542, 812/683-2211, Loma Wm. Hartke, supt.; 2,672 met.; no gen.; pur. 41.8 million kwh; rev. $1,267,584.

JAMESTOWN Mun. Light Dept., 46147, 317/676-7331, W. D. Henry, supt.; 348 met.; no gen.; pur. 3.6 million kwh.

JASPER Mun. Utilities, E. Fifteenth St., Box 150, 47546, 812/482-3003, Donald Ferguson, manager (1896); 4,157 met.; gen 14,500 kw steam, 56.7 million kwh; pur. 85.6 million kwh; rev. $3,928,746.

KINGSFORD HEIGHTS Mun. Util., 46346, 219/362-1521, James D. Stone, supt.

KNIGHTSTOWN Water & Light Plant, 26 S. Washington St., 46148, 317/345-5977, Arnold C. Butler, supt.; 1,487 met.; no gen.; pur. 8.9 million kwh; rev. $198,597.

LADOGA Light Dept., 47954, 317/942-2531, James Cross, mgr.; no gen.

LAWRENCEBURG Mun. Utilities, 405 Main St., Box 112, 47025, 812/537-2420, Roland Horney, dir of utils., 2,495 met.; no gen.; pur. 54 million kwh; rev. $1,272,386.

LEBANON, City of, Utilities, 201 E. Main St., Box 479, 46052, 317/482-5100, James B. Nelson, mgr. (1942); 5,631 met.; no gen.; pur. 91.3 million kwh; rev. $3,099,077.

LEWISVILLE Mun. Light Dept., 47352, 317/987-7979, Robert Harris, supt.; 200 met.; no gen.

LINTON Mun. Electric Utility, 49 N.W. "A" St., 47441, 812/847-4971, William McNew, supt. (1912); 3,200 met.; no gen.; pur. 41.4 million kwh; rev. $1,341,923.

LOGANSPORT Mun. Utilities, City Bldg., 601 E. Broadway, 46947, 219/753-6119, Steve Kovacs, mgr.; 12,073 met.; gen. 56,000 kw, 39,000 kw steam, 17,000 kw gas turbine, 114.2 million kwh; pur. 146.3 million kwh; rev. $6,716,786.

MIDDLETOWN Elec. Util., 102 N. Fifth St., 47356, 317/354-2911, Richard Westrater, supt.; 910 met.; no gen.; pur. 4.7 million kwh; rev. $122,979.

MISHAWAKA Mun. Utilities, 126 N. Church St., Box 363, 46544, 219/259-1995, Kenneth Hobson, gen. mgr. (1895); 17,620 met.; no gen.; pur. 230 million kwh; rev. $8,012,578.

MONTEZUMA Mun. Utilities, 111 Crawford St., 47862, 317/245-2759, Leroy Waymire, field supvr.; 779 met.; no gen.; pur. 3.3 million kwh.

NEW CARLISLE Electric, 46552, 219/654-3733, Cecil McCollum, supt. (1904); 600 met.; no gen.; pur. 6.9 million kwh; rev. $246,730.

NEW ROSS Electric Service Dept., 47968, 317/723-1154, Harold Poland, supt.; 180 met.; no gen.; pur. 1.2 million kwh; rev. $33,078.

PAOLI Water & Light Dept., Public Square, 47454, 812/723-2739, Herbert Bostock, supt.; no gen.

PENDLETON Mun. Util., 122 E. State St., Box 230, 46064, 317/778-4613, Jack Guard, supt.; 1,291 met.; no gen.; pur. 8.5 million kwh; rev. $328,952.

PERU Electric Light & Power, 19 E. Third St., Box 67, 46970, 317/473-6681, William H. Buffington, gen. mgr. (1903); 10,000 met.; gen. 35,000 kw steam, 83.1 million kwh; pur. 94.4 million kwh; rev. $6,175,000.

PITTSBORO Mun. Light Plant, 46167, 317/892-3435, Charles Waters, supt.; no gen.

RENSSELAER Mun. Power Plant, 425 N. Van Rensselaer St., 47978, 219/866-7551, Tom Phegley, dist. supt., Edward J. Putnam, plant supt. (1897); 2,311 met.; gen. 23,720 kw eng., 35.1 million kwh; pur. none; rev. $694,920.

RICHMOND Power and Light, 2000 Hwy. U.S. 27 South, 47374, 317/935-3131, Irving A. Huffman, gen. mgr. (1904); 20,153 met.; gen. 93,000 kw steam, 12.2 million kwh; pur. 207.4 million kwh; rev. $17,895,539.

RISING SUN Mun. Utilities, First and Poplar Sts., 47040, 812/438-3616, Neal Hastings, mgr.; 1,091 met.; no gen.; pur. 8 million kwh; rev. $171,834.

ROCKVILLE Electric Light Plant, 105 W. High St., 47872, 812/569-5145, James Skelton, supt.; 1,600 met.; no gen.; pur. 13.2 million kwh; rev. $223,370.

SCOTTSBURG Mun. Electric Light Dept., 55 N. First St., 47170, 812/752-3199, Herbert Robison, sutp.; no gen.

SOUTH WHITLEY Mun. Electric Light Dept., 118 E. Front St., 46787, 219/723-4741, Meredith A. Slater, supt. (1895); 765 met.; no gen.; pur. 12.4 million kwh; rev. $220,886.

SPICELAND Mun. Light Plant, 47385, 317/987-7365, William Acton, supt.; 500 met.; no gen.

STRAUGHN Mun. Electric Plant, 47387, 317/891-3166, Eldon Sons, supt.; 163 met.; no gen.; pur. 1 million kwh; rev. $25,000.

TELL CITY Electric Dept., Box 9, 47586, 812/547-3201, J. P. Harding, supt. (1941); 3,950 met.; no gen.; pur. 102.6 million kwh; rev. $2,937,000.

THORNTOWN Utilities, 102 N. Pearl St., 46071, 317/436-2627, O. Jack Hutchens, supt. (1951); 601 met.; no gen.; pur. 6.1 million kwh; rev. $130,113.

TIPTON Light and Power Co., 225 E. Jefferson St., 46072, 317/675-7292, Paul W. Osler, gen. mgr. (1901); 3,590 met.; no gen.; pur. 71.1 million kwh; rev. $2,373,855.

TROY Utilities, 47588, 812/547-7501, Fred Osborne, supt.; no gen.

VEEDERSBURG Mun. Electric Plant, Railroad Ave., 47987, 317/294-2728, Robert L. Jackson,

HASTINGS Utilities, 1228 N. Denver, Box 289, 68901, 402/463-1371, Lee Blocker, mgr. (1901); 10,500 met.; gen. 114,650 kw, 96,500 kw steam, 18,150 kw gas turbine, 125.8 million kwh; pur. 42 million kwh; rev. $3,764,923.

HEBRON Elec. Dept., 211 Lincoln Ave., 68370, 402/768-6322; LaVon Boman, comm.; 950 met.; no gen.; pur. 11.4 million kwh.

HEMINGFORD Utilities, Box 338, 69348, 450 met.; no gen.; pur. 3 million kwh; rev. $67,800.

HENRY Utilities, 69349, Michael Summey, supt.; 50 met.; no gen.; pur. 600,000 kwh.

HICKMAN, 68372, Leon Ten Hulzen, supt.; no gen.

HILDRETH Utilities, 68947, Dale Casper, supt.; 218 met.; no gen.; pur. 1.1 million kwh; rev. $26,802.

HOLBROOK Mun. Light and Power Plant, 68948, 308/493-5653, Don Vonderfecht, supt.; 197 met.; gen. 120 kw eng.; pur. 864,000 kwh; rev. $24,104.

HOLDREGE Mun. Utils. System, 502 East Ave., 68949, 308/995-8681, Marvin Paulsen, utils. supt. (1919); 2,905 met.; no gen.; pur. 78.3 million kwh; rev. $2,340,280.

HOWARD GREELEY RURAL PUBLIC POWER DISTRICT, 422 Howard Ave., Box 105, St. Paul, 68873, 308/754-4457, Roy L. Olsen, mgr. (1938); 2,566 met.; no gen.; pur. 51.3 million kwh; rev. $1,830,280.

HOWELLS Mun. Elec. Dist. System, 68641, 402/986-1666, Martin Thiem, supt.; no gen.; pur. 5 million kwh.

HUBBELL Electric Dept., 68375, Gerald VanWinkle, comm.; no gen.

IMPERIAL Mun. Utilities, 69033, 308/882-5151, Marvin S. Athey, supt. (1917); 1,030 met.; gen. 740 kw, 620 kw eng., 120 kw hydro; 12,000 kwh; pur. 18 million kwh; rev. $288,000.

INDIANOLA Elec. Dept., 69034, 308/364-2413, Warren Young, supt.; 350 met.; no gen.; pur. 3.6 million kwh.

KBR RURAL PUBLIC POWER DISTRICT, E. Fourth and N. Pine Sts., Box 187, Ainsworth, 69210, 402/387-1120, Duane Philben, mgr.; 2,856 met.; no gen.; pur. 34.8 million kwh; rev. $1,283,273.

KIMBALL Utilities, 223 S. Chestnut, 69145, Robert E. Arraj, dir. pub. works; 2,000 met.; gen. 9,900 kw eng., 15.7 million kwh.

LAUREL Mun. Electric Light & Power Plant, 68745, 402/256-3112, L. J. Mallatt, mgr.; 520 met.; gen. 3,885 kw eng., 4.3 million kwh; pur. none; rev. $102,409.

LEIGH Light & Power Dept., 68643, Daniel G. Fischer, comm.; 260 met.

LEXINGTON Electric Dept., 406 E. Seventh St., Box 70, 68850, 308/324-2343, Jack Heaton, city mgr. (1945); 3,254 met.; no gen.; pur. 60 million kwh; rev. $1,835,393.

LINCOLN Electric System, Suite 300, 1200 N St., P.O. Box 80869 68501, 402/475-4211, Walter A. Canney, adm. (1913); 78,670 met.; gen. 107,000 kw, 87,000 kw gas turbine, 20,000 kw steam, 3 million kwh; pur. 1,488.4 million kwh; rev. $56,216,905.

LODGEPOLE Water & Light Dept., 69149, Lloyd R. Dykman, supt.; 200 met.; gen. 245 kw eng.; pur. 1.6 million kwh.

LOOMIS, 68958, Tommy Smith, light comm.; no gen.

LOUP RIVER PUBLIC POWER DISTRICT, Box 988, Columbus, 68601, 402/564-3171, Max E. Kiburz, gen. mgr. (1933); 14,425 met.; gen. 48,150 kw hydro, 141 million kwh; pur. 568.5 million kwh; rev. $16,167,598.

LOUP VALLEYS RURAL PUBLIC POWER DISTRICT, Box 166, Ord, 68862, 308/728-5541, Wilbert J. Calvin, mgr.; 2,928 met.; no gen.; pur. 33.5 million kwh; rev. $1,197,556.

LYMAN Electric Dept., Box 301, 69352, 308/787-1444, Carl Nevius, supt.; 258 met.; no gen.; pur. 3.3 million kwh; rev. $67,069.

LYONS Mun. Utilities, 68038, 402/687-2130, Paul R. Hayes, supt.; 535 met.; gen. 3,135 kw eng., 3.1 million kwh (capacity leased to Nebraska Public Power District); rev. $90,164.

MADISON, City of, Box 527, 68748, 402/454-2625, Mark I. Arbuthnot, city adm., 1,200 met.; gen. 5,260 kw, 4,570 kw comb. cycle; 690 kw eng., 5.7 million kwh; pur. 27.3 million kwh; rev. $1,090,023.

McCOOK PUBLIC POWER DISTRICT, Box 739, McCook, 69001, 308/345-2500, James A. Underwood, mgr.; 3,923 met.; no gen.; pur. 99.7 million kwh; rev. $2,973,015.

MEAD Mun. Light & Water Plant, 68041, Clifford Hayford, supt.; 160 met.; no gen.

MINDEN Light & Water Comm., 246 N. Colorado Ave., 68959, 308/832-1820, Thomas B. Kenney, supt.; 1,400 met.; gen. 1,000 kw eng.; pur. 14 million kwh.

MITCHELL Mun. Electric Dept., 1145 Center Ave., 69357, 308/623-2133, Don R. Ward, supt. (1934); 900 met.; no gen.; pur. 10.8 million kwh; rev. $340,570.

MORRILL Mun. Electric Dept., Box 305, 69358, 308/247-2312, Richard J. Doyle, supt.; 651 met.; no gen.; pur. 9 million kwh.

MULLEN Mun. Light & Water Plant, 69152, Gordon Quincy, supt.; 4,700 met.

NEBRASKA CITY Utilities, 100 Central Ave., 68410, 402/873-3353, William T. Brockley, gen. mgr. (1945); 5,330 met.; gen. 24,170 kw eng., 53.1 million kwh; pur. 37.4 million kwh; rev. $1,745,836.

NEBRASKA PUBLIC POWER DISTRICT (formerly Consumers Public Power District), 1414 Fifteenth St., Box 499, Columbus, 68601, 402/564-8561, D. W. Hill, gen. mgr. (1939); 107,490 met.; gen. 2,215,500 kw, 1,119,800 kw steam, 149,000 kw gas turbine, 45,100 kw eng., 123,600 kw hydro, 778,000 kw nuclear, 1,526.9 million kwh; pur. 7,092.5 million kwh; rev. $256,432,560.

NELSON Mun. Light & Water Dept., Box 117, 68961, 402/224-4401, Virgil Schleif, light supt.; 400 met.; no gen.; pur. 3.4 million kwh; rev. $67,998.

NORRIS PUBLIC POWER DISTRICT, 606 Irving St., Box 399, Beatrice, 68310, 402/223-4038, Glen R. Schmeiding, gen. mgr. (1941); 10,799 met.; gen. 700 kw hydro, 838,370 kwh; pur. 293.5 million kwh; rev. $9,018,000.

NORTH CENTRAL PUBLIC POWER DISTRICT, Box 7, Creighton, 68729, 402/358-5112, Peter E. Thomassen, mgr.; 3,355 met.; no gen.; pur. 50.9 million kwh; rev. $1,701,700.

NORTHEAST NEBRASKA RURAL PUBLIC POWER DISTRICT, Box 39, Emerson, 68733, 402/695-2642, Cecil C. Plummer, mgr.; 2,547 met.; no gen.; pur. 50.5 million kwh; rev. $1,511,142.

NORTH PLATTE Mun. Light & Power, Third and Vine St., 69101, 308/532-5320, John F. Cox, mgr. (1940); 12,917 met.; no gen.; pur. 187.6 million kwh; rev. $6,515,437.

NORTHWEST RURAL PUBLIC POWER DISTRICT, Box 249, Hay Springs, 69347, 308/638-2491, Donald R. Armstrong, gen. mgr.; 2,525 met.; no gen.; pur. 40.8 million kwh; rev. $1,286,145.

OMAHA PUBLIC POWER DISTRICT, 1623 Harney St., 68102, 402/536-4000, Lloyd C. Shalla, gen. mgr. (1946); 210,771 met.; gen. 1,985,100 kw, 1,291,000 kw steam, 464,000 kw nuclear, 212,200 kw gas turbine, 17,900 kw eng., 6,823.8 million kwh; pur. 1,188.7 million kwh; rev. $194,087,051.

ORD Light & Water Plant, 240 S. Sixteenth St., 68862, 308/728-5791, Gene Baugh, util. comm. (1916); 1,821 met.; gen. 11,500 kw eng., 13.1 million kwh; pur. none; rev. $336,252.

OXFORD Mun. Light & Power Plant, 68967, Ronald Ludeke, supt.; gen. 4,220 kw eng.

PAXTON Light & Power Dept., 69155, Keith Loper, supt.; 274 met.; gen. 580 kw eng.

PENDER Mun. Light & Power Plant, 68047, 402/385-3232, Robert Fendrick, supt. (1920); 655 met.; gen. 5,300 kw eng., 6.1 million kwh; pur. 4 million kwh; rev. $350,000.

PIERCE Utilities, Light & Power Dept., 114 S. Brown, 68767, 402/329-4535, Clarence H. Wattier, supt. (1941); 500 met.; no gen.; pur. 5.8 million kwh; rev. $160,000.

PLAINVIEW Mun. Power Plant, Box 307, 68769, 402/582-4528, Fred Diedrichsen, city adm.; 700 met.; gen. 3,100 kw eng., 3.5 million kwh; pur. 5 million kwh; rev. $350,000.

POLK Light & Water Works, 68654, Arnold L. Neuhaus, mgr.; 240 met.; no gen.

POLK COUNTY RURAL PUBLIC POWER DISTRICT, 120 W. Fourth St., Box 465, Stromsburg, 68666, 402/764-4381, Merlin Steele, mgr.; 2,226 met.; no gen.; pur. 39.9 million kwh; rev. $1,185,876.

PRAGUE Elec. Dept., 68050, Dennis Urban, supt.; 180 met.; no gen.; pur. 1.8 million kwh.

RANDOLPH Mun. Electric Light & Water Plant, Box 220, 68771, 402/337-0553, LeRoy Brummels, supt.; 630 met.; gen. 2,965 kw eng., 5 million kwh; pur. none; rev. $112,495.

RED CLOUD Mun. Electric Dept., 546 N. Webster, 68976, 402/746-2214, Kenneth P. Schwartz, supt. (1912); 805 met.; gen. 6,500 kw eng., 8 million kwh; pur. none; rev. $326,656.

REYNOLDS Electric, 68429, 402/547-3685, Richard Gregory, utils. supt., (1923); 63 met.; no gen.; pur. 528,500 kwh; rev. $18,371.

ROOSEVELT PUBLIC POWER DISTRICT, 1633 Thirteenth St., Box 97, Mitchell, 69357, 308/623-2124, H. F. Moranville, mgr.; 2,063 met.; no gen.; pur. 62.9 million kwh; rev. $1,425,477. (Includes former Gering Valley Rural Public Power District.)

ST. PAUL City Utilities, 522 Howard Ave., 68873, 308/754-4361, Lyle Leth, city engr.; 900 met.; no gen.; pur. 6.9 million kwh; rev. $175,000.

SALEM Light & Water Comm., 68433, Jon Marrs, chair., bd. of trustees; 95 met.; no gen.; rev. $26,138.

SARGENT Mun. Electric Dept., Box 40, 68874, 308/527-4200, Robert Gruber, supt.; 450 met.; gen. 2,468 kw eng.; pur. 5.5 million kwh.

SCHUYLER Dept. of Utilities, 124 E. Eleventh St., 68661, 402/352-5445, Nelson Hamblin, supt. (1892); 1,875 met.; gen. 7,500 kw steam, 7.3 million kwh; pur. 45 million kwh; rev. $1,024,890.

supt.; 950 met.; no gen.; pur. 8 million kwh.

WALKERTON Electric Dept., 510 Rossevelt Rd., 46574, 219/586-3613, Marvin Williams, supt.; 1,050 met.; no gen.; pur. 12.7 million kwh.

WARREN Electric Util., 46792, 219/375-3424, Steve Furniss, supt.; 643 met.; no gen.; pur. 5.7 million kwh.

WASHINGTON City Light & Power, Utility Bldg., E. 21st St., 812/254-5171, Brayton Nalker, supt. (1920); 7,100 met.; no gen.; pur. 100 million kwh; rev. $2,341,736.

WAYNETOWN Mun. Electric Dept., Box 215, 47990, 317/234-2154, Richard Peterman, supt.; 436 met.; no gen.; rev. $75,501.

WILLIAMSPORT Light & Water Utility, 47993, 317/764-4070, Robert Wagner, supt.; 578 met.; no gen.; pur. 4.1 million kwh.

WINAMAC Mun. Light & Power, 120 Main St., 46996, 219/946-3451, A. Allen Boos, mgr. (1898); 1,635 met.; no gen.; pur. 33.2 million kwh; rev. $897,556.

IOWA

AFTON Mun. Electric Light System, 50830, 515/347-5224, Kathy Flam, city clerk; 373 met.; no gen.; pur. 3 million kwh.

AKRON Mun. Light & Water Works, First and Reed Sts., 51001, 712/568-2541, Steven D. Snow, supt. (1916); 750 met.; gen 1,596 kw eng., 2,470 kwh; pur. 9.5 million kwh; rev. $215,342.

ALGONA Mun. Utilities, 104 W. Call St., 50511, 515/295-3584, Nicholas R. Scholer, supt. (1898); 2,815 met.; gen. 13,200 kw eng., 35.4 million kwh; pur. 24.8 million kwh; rev. $2,199,139.

ALTA Mun. Power, 109 Prospect St., 51002, 712/284-1122, Ronald L. Deiber, supt. (1893); 1,070 met.; gen. 1,250 kw eng.; pur. 11.2 million kwh; rev. $274,929.

ALTA VISTA Electric Dept., City Hall, 50603, 515/364-2975, Marvin Nielson, supt.; 105 met.; no gen.; pur. 1.6 million kwh; rev. $44,342.

ALTON Mun. Light & Power, Box J, 51003, 712/756-4314, Curtis Punt, supt. (1968); 506 met.; no gen.; pur. 7.8 million kwh; rev. $277,380.

AMES Mun. Elec. System, Municipal Bldg., 50010, 515/232-6210, Merlin C. Hove, dir. (1896); 13,053 met.; gen. 81,00 kw, 60,000 kw steam, 20,000 kw gas turbine, 1,000 kw eng., 222 million kwh; pur. 16 million kwh; rev. $8,517,597.

ANITA Mun. Utilities, 828 Main St., 50020, 712/762-3845, Herschel McCaskey, supt. (1939); 627 met.; gen. 747 kw eng.; pur. 7 million kwh; rev. $156,586.

ANTHON Electric Plant, 51004, 712/373-5218, Frederick W. Burrow, Jr., supt.; no gen.

APLINGTON Mun. Light System, 50604, 319/347-2425, Orville B. Muller, supt.; no gen.

ATLANTIC Mun. Utilities, 15 W. Third St., 50022, 712/243-1395, Richard J. Stevens, supt.; 4,200 met.; gen. 28,950 kw, 24,750 kw steam, 4,200 kw eng., 72 million kwh; pur. 35 million kwh; rev. $3,242,913.

AUBURN Mun. Utilities, 51433, 712/688-2264, Muriel Minglin, city clerk.

AURELIA Mun. Elec. Utility, 235 Main St., 51005, 712/434-2025, Ed Radke, chmn., bd. of trustees, (1974); 546 met.; no gen.; pur. 6.4 million kwh.; rev. $293,325.

BANCROFT Mun. Electric Plant, N. Portland St., 50517, 515/885-2772, Walter Fangman, supt. (1939); 561 met.; gen. 1,500 kw eng., 10,900 kwh; pur. 9.1 million kwh; rev. $431,100.

BELLEVUE Mun. Utilities, 900 N. Riverview, 52031, 319/872-3357, Ray Beschen, supt. (1896); 1,200 met.; gen. 5,320 kw eng., 11.6 million kwh; pur. 1.7 million kwh; rev. $310,641.

BLOOMFIELD Mun. Light Plant, 111 W. Franklin St., 52537, 515/664-2260, Samuel Botts, dir. pub. wks. (1911); 1,517 met.; gen. 8,020 kw eng., 4.5 million kwh; pur. 19.3 million kwh.

BREDA Electrical System, 51436, 712/673-2660, R. J. Stark, supt.; no gen.

BROOKLYN Mun. Electric Plant, 207 Front St., 52211, 515/522-9292, Dale Hawkins, mgr. (1940); 633 met.; gen. 2,424 kw eng., 885,600 kwh; pur. 6.9 million kwh; rev. $213,336.

BUFFALO Mun. Distributing System, 52728, 319/381-2226, Eldon L. Mosier, supt.; 420 met.; no gen.

BURT Electric Dept., 50522, 515/924-3360, Wayne Lavrenz, supt. (1930); 450 met.; no gen.; pur. 2 million kwh; rev. $50,000.

CALLENDER Electric Dept., 730 Thomas St., 50523, 515/548-3859, Robert Lane, mayor; 200 met.; no gen.; pur. 1 million kwh.

CARLISLE Mun. Elec., P.O. Box 430, 50047, 515/989-3224, Fred Loudenslager, supt. (1930); 1,250 met.; no gen.; pur. 12.4 million kwh; rev. $500,000.

CASCADE Mun. Utilities, 201 Pierce St., 52033, 319/852-3614, Fred A. Kremer, gen. mgr. (1940); 1,064 met.; gen. 3,857 kw eng., 2.1 million kwh; pur. 7.4 million kwh; rev. $496,180.

CEDAR FALLS Mun. Utilities, 612 E. Twelfth St., 50613, 319/266-1761, Dean Crowe, gen. mgr. (1913); 13,818 met.; gen. 105,000 kw, 84,000 kw steam, 21,000/25,000 kw gas turbine, 214 million kwh; pur. 59.6 million kwh; rev. $12,043,987.

COGGON Mun. Light Plant, 131 W. Main St., 52218, 319/435-2436, Robert L. Farley, supt. (1928); 270 met.; gen. 1,210 kw eng., 300,000 kwh; pur. 1.9 million kwh; rev. $70,000.

COON RAPIDS Mun. Utilities, 123 3rd Ave., Box 207, 50058, 712/684-2225, Eugene P. Smith, mgr. (1936); 789 met.; gen. 5,900 kw, 3,000 kw steam, 2,900 eng., 3,729,985 kwh; pur. 14.8 million kwh; rev. $830,935.

CORNING Mun. Utilities, 501 Benton Ave., 50841, 515/322-3920, Dick G. Cook, supt. (1936); 1,018 met.; gen. 6,263 kw eng., 62,121 kwh; pur. 14.5 million kwh; rev. $377,053.

CORWITH Elec. Dept., 50430, 515/583-2342, Darwyn Kinsey, supt.; 230 met.; no gen.

DANVILLE Elec. Dept., 52623, 319/392-4531, Jack Ingraham, supt.; no gen.

DAYTON Light & Power, 101 S. Main, 50530; 515/547-2711, Mrs. Shirley B. Miller, city clerk; 410 met.; gen. 1,407 kw eng.

DENISON Mun. Utilities, 1436 Fifth Ave. S., Box 518, 51442, 712/263-4154, Daymon Abbott, gen. mgr. (1914); 2,725 met.; no gen.; pur. 84.2 million kwh; rev. $1,292,878.

DENVER Mun. Electric Dept., 50622, 319/984-5602, Larry Zars, supt.; no gen.

DIKE, Town of, Box 160, 50624, 319/989-2291, Donald Knudsen, mayor; 324 met.; no gen.; pur. 2.9 million kwh; rev. $68,319.

DURANT Mun. Electric Plant, 601 Fourth St., Box 494, 52747, 319/785-6213, V. R. Crist, supt. (1942); 746 met.; gen. 3,788 kw eng., 170,500 kwh; pur. 10.4 million kwh; rev. $463,708.

DYSART Elec. Dept., 52224, 319/476-5690, Harold M. Langbehn, supt.; no gen.

EARLVILLE Lights & Water System, 52041, 319/923-2042, Vincent D. Herman, supt.; 260 met.; no gen.

ELDON, Town of, 52554, 515/652-7510, Lloyd Jones, supt.; 600 met.; no gen.; pur. 5.1 million kwh; rev. $175,049

ELDRIDGE Mun. Elec., Box 350, 52748, 319/285-4841, John W. Miller, mgr. (1900); 900 met.; no gen.; rev. $250,000.

ELLSWORTH Mun. Light Plant, 50075, 515/836-4751, Raymond L. Anderson, supt.; 240 met.; no gen; pur. 1.4 million kwh; rev. $42,824.

ESTHERVILLE Mun. Elec. Util., 19 S. Seventh St., 51334, 712/362-4725, Steve Woodley, city admr., (1894); 3,401 met.; gen. 15,650 kw eng., 8.6 million kwh; pur. 47.3 million kwh; rev. $2,518,507.

FAIRBANK Electric Dept., City Hall, 50629, 319/635-2124, Dale Erickson, supt.; 300 met.; no gen.

FARNHAMVILLE Electric Dept., 50538, 712/462-3660, Dennis Jacobson, supt.; 200 met.; no gen.

FONDA Mun. Electric System, 50540, 712/288-6618, Jack Weintzetl, supt.; 400 met.; no gen.

FONTANELLE, Town of, 50846, 515/745-3961, Delmer D. Miller, supt.; 387 met.; no gen.; pur. 2.3 million kwh; rev. $67,813.

FOREST CITY Mun. Light Plant, 50436, 515/582-4343, Orlando Peterson, dist. supt., Willard Charlson, plant supt.; 1,370 met.; gen. 2,965 kw eng., 6.7 million kwh; pur. 1.5 million kwh; rev. $231,753.

FREDERICKSBURG Mun. Light Dept., 50630, 515/237-5725, Vernon Kerr, supt.; no gen.

GLIDDEN Elec. Dept., 114 Idaho St., 51443, 712/659-3010, R. D. Larsh, city clerk (1919); 520 met.; no gen.; pur. 4.7 million kwh; rev. $114,289.

GOWRIE Mun. Utilities, Box 47, 50543, 515/352-3065. Donald G. Borgen, supt. (1934); 620 met.; gen. 3,600 kw eng., 136,000 kwh; pur. 6.5 million kwh; rev. $439,700.

GRAETTINGER Mun. Light Plant, 51342, 712/859-3844, Kenneth R. Jensen, supt. (1941); 450 met.; gen. 1,100 kw eng., 7,200 kwh; pur. 4.1 million kwh; rev. $102,415.

GRAFTON Electric Dept., 50440, 515/748-2731, John A. Bork, city clerk; no gen.

GRAND JUNCTION Mun. Light Dept., 3055 Eleventh St., 50107, 515/738-2285, F. M. Dittert, supt.; 531 met.; gen. 560 kw eng., 164,500 kwh; pur. 5.3 million kwh; rev. $209,942.

GREENFIELD Mun. Utilities, 211 S. First St., Box 95, 50849, 515/743-2914, Garry Stuva, supt. (1890); 1,330 met.; gen. 6,750 kw eng., 400,000 kwh; pur. 15.8 million kwh; rev. $710,668.

GRUNDY CENTER Mun. Light & Power, 506 Seventh St., 50638, 319/824-5208, Edward (Bob) Ayers, mgr. (1941); 1,735 met.; gen. 5,750 kw eng., 15.8 million kwh; pur. 3.2 million kwh; rev. $457,000.

GUTTENBERG Elec. Dept., Box D, 52052, 319/252-1161, Dwain Hess, city mgr.; 1,041 met.; no gen.; pur. 8.5 million kwh; rev. $238,000.

HARLAN Mun. Utilities, 1020 Sixth St., Box 71, 51537, 712/755-5182, F. James Kalal, gen. mgr. (1909); 2,650 met.; gen. 5,300 kw eng., 400,000 kwh; pur. 41 million kwh; rev. $1,400,000.

HARTLEY Mun. Utilities, 169 S. Central Ave., 51346, 712/728-2240, Dean E. Meyer, supt. (1908); 850 met.; gen. 2,253 kw eng., 2,800 kwh; pur. 9.4 million kwh; rev. $173,489.

HAWARDEN Mun. Utilities, 800 Seventh St., 51023, 712/522-1344, Willis D. Frank, supt. pub. works (1894); 1,550 met.; gen. 2,400 kw eng., 29,050 kwh; pur. 20 million kwh; rev. $521,179.

HINTON Elec. Light & Power Service, 51024, 712/947-4213, William Farmer, supt.; 200 met.; no gen.; pur. 1.6 million kwh; rev. $42,000.

HOPKINTON Mun. Utilities, Box 248, 52237, 319/926-2480, Steven C. Secrist, supt. (1938); 433 met.; gen. 2,036 kw eng., 5,000 kwh; pur 6.9 million kwh; rev. $220,654.

HUDSON Electric Dept., Box 266, 50643, 319/988-3343, Edwin Andorf, supt. (1910); 710 met.; no gen.; pur. 7.5 million kwh; rev. $278,342.

INDEPENDENCE Mun. Light Plant, 711 Seventh Ave., Box 754, 50644, 319/334-3880, Gene Williamson, supt. (1920); 2,982 met.; gen. 15,000 kw eng., 24.9 million kwh; pur. 5.7 million kwh; rev. $726,630.

INDIANOLA Mun. Utilities, 111 S. Buxton, 50125, 515/961-5710, John Harrison, supt. (1895); 4,024 met.; gen. 34,000 kw, 20,600 kw gas turbine, 13,400 kw eng., 7.5 million kwh; pur. 48.1 million kwh; rev. $1,925,905.

KELLEY Mun. Distribution System, 50134, 515/769-2213, Marvin Kennedy, mayor.

KEOSAUQUA Mun. Light & Power, Box 216, 52565, 319/293-3406, Donald Carruthers, supt.; 715 met.; gen. 1,040 kw eng., 121,700 kwh; pur. 4.9 million kwh; rev. $140,000.

KIMBALLTON Mun. Light Plant, 51543, 712/773-5062, Rex Batterson, supt.; 190 met.; gen. 803 kw eng.; pur. 1.8 million kwh.

LAKE MILLS Mun. Elec. Utility, 201 S. Mill St., 50450, 515/592-2441, Donald F. Wirt, dir. of util. (1937); 1,200 met.; gen. 11,500 kw eng., 3.3 million kwh; pur. 17 million kwh; rev. $970,000.

LAKE PARK Mun. Utilities, 51347, 712/832-3176, Merel Clark, supt. (1947); 549 met.; gen. 1,300 kw eng.; pur. 7 million kwh; rev. $242,317.

LAKE VIEW,City of, Mun. Utils., 306 Main St. 51450, 712/657-2212, Eugene G. Meyers, dir. of oper., 1,267 met.; no gen.; pur. 14.5 million kwh; rev. $390,266.

LAMONI Mun. Utilities, 111 S. Chestnut St., 50140, 515/784-6911, Robert A. Colyer, supt. (1940); 1,127 met.; gen. 5,223 kw eng., 254,600 kwh; pur. 13.6 million kwh; rev. $703,906.

LA PORTE CITY Utility Co., 200 E. Main St., Box 142, 50651, 319/342-2053, Chuck Utley, supt. (1934); 1,330 met.; gen. 2,861 kw eng., 51,600 kwh; pur. 11.8 million kwh; rev. $493,675.

LARCHWOOD Mun. Electric, 51241, 712/477-2929, Roy Gallagher, mayor; 300 met.; no gen., 3.5 million kwh; rev. $135,500.

LAURENS Mun. Light & Power Plant, 50554, 712/845-4610, Lyle W. Hartwig, supt. (1949); 862 met.; gen. 1,500 kw eng.; 81,000 kwh; pur. 13.8 million kwh; rev. $478,913.

LAWLER Elec. Dept., 52154, 515/238-3614, Ray Kipp, supt.; no gen.

LEHIGH Elec. Dept., 50557, 515/359-2311, Franklin Boering, supt.; no gen.

LENOX Mun. Light & Power, Box 96, 50851, 515/333-2550, Leo H. Miller, gen. mgr. (1931); 732 met.; gen. 2,330 kw eng., 11,400 kwh; pur. 10.7 million kwh; rev. $311,021.

LIVERMORE Lighting Dept., 50558, 515/379-1617, Noble Harris, supt.; 306 met.; no gen.; pur. 2 million kwh; rev. $60,000.

LONG GROVE Electric Utility Plant, Box 210, 52756, 319/285-9743, James Nagle, pub. wks. dir.; 144 met.; no gen.; pur. 1,639,000 kwh.

MANILLA Mun. Service, 166 Sixth Ave., 51454, 712/654-3952, James H. Macumber, supt. (1915); 520 met.; gen. 1,130 kw eng., 452 kwh; pur. 7.3 million kwh; rev. $221,761.

MANNING Mun. Light Plant, 719 Third St., 51455, 712/653-3412, Gerald Beck, mgr. (1937); 892 met.; gen. 1,610 kw eng., 3,780 kwh; pur. 15.1 million kwh; rev. $528,650.

MAPLETON Mun. Electric Plant, Front St., 51034, 712/882-1411, Clifton C. Clark, mgr.; 852 met.; gen. 1,315 kw eng.; pur. 5.4 million kwh; rev. $130,087.

MAQUOKETA Mun. Electric System, 121 S. Olive St., 52060, 319/652-2484, Patrick Callahan, city mgr. (1919); 2,374 met.; gen. 8,500 kw eng., 1.5 million kwh; pur. 30.6 million kwh; rev. $2,036,200.

MARATHON Light & Water Dept., 50565, 712/289-2261 (1916); 220 met.; no gen.; pur. 1.8 million kwh; rev. $53,700.

McGREGOR Mun. Utilities, 52157, 319/873-2258, Bob Henkes, chmn; bd. of trustees (1941); 526 met.; gen. 2,013 kw eng., 53,550 kwh; pur. 6.6 million kwh; rev. $379,429.

MILFORD Mun. Light Plant, 907 Eleventh St., 51351, 712/338-4376, Norman Parsons, supt. (1935); 815 met.; gen. 1,500 kw eng., 900 kwh; pur. 12.7 million kwh; rev. $357,988.

MONTEZUMA Mun. Light & Power, 406 E. Washington, 50171, 515/623-5102, Don H. Fahlenkamp, supt. (1939); 960 met.; gen. 6,438 kw eng., 183,285 kwh; pur. 12.5 million kwh; rev. $601,055.

MOUNT PLEASANT Utilities, 509 N. Adams St., 52641, 319/385-2121, James Ritter, util. mgr. (1897); 2,749 met.; gen. 13,000 kw, 12,000 kw steam, 1,000 kw eng., 26.1 million kwh; pur. 3.3 million kwh; rev. $675,000.

MUSCATINE Power & Water, 3205 Cedar St., Box 899, 52761, 319/263-2631, Clyde L. Bowen, gen. mgr. (1924); 9,718 met.; gen. 121,000 kw steam, 505.5 million kwh; pur. 83.9 million kwh; rev. $16,297,012.

NEOLA Light & Water Dept., 51559, 712/485-2298, George Soppe, Mgr.; 310 met.; no gen.

NEW HAMPTON Mun. Light Plant, 921 Canty Ave., 50659, 515/394-3002, Robert K. Kamrath, supt. (1903); 1,774 met.; gen. 16,020 kw eng., 25 million kwh; pur. 19.8 million kwh; rev. $1,256,114.

NEW LONDON Mun. Light & Power Dept., 120 W. Main St., 52645, 319/367-5623, Merle Steward, mgr. (1909); 1,150 met.; no gen.; pur. 10 million kwh; rev. $408,000.

OGDEN Mun. Utilities, Box 70 50212, 515/275-2437, Harold Hammarstedt, supt. (1936); 1,003 met.; gen. 3,980 kw eng., 1.2 million kwh; pur. 7.8 million kwh; rev. $343,580.

ONAWA Mun. Utility, 914 Diamond, 51040, 712/423-1181, Everett Sorenson, supt. utils. (1894); 1,697 met.; gen. 3,210 kw eng.; pur. 23.7 million kwh; rev. $829,965.

ORANGE CITY Mun. Utilities, 125 Central Ave., S. E., 51041, 712/737-4885, Allen Roos, mgr. (1921); 2,180 met.; gen. 3,625 kw eng.; pur. 36.2 million kwh; rev. $1,155,705.

ORIENT Electric System, 50858, 515/337-5414, Dan David, supt.; 200 met.; no gen.

OSAGE Mun. Utilities, 720 Chestnut St., 50461, 515/732-3731, Weston D. Birdsall, gen. mgr. (1941); 2,053 met.; gen. 11,700 kw eng., 1.2 million kwh; pur. 24.6 million kwh; rev. $1,110,077.

PANORA Electric Dept., City Hall, 50216, 515/755-2164, Allen J. Bonderman, supt.; 650 met.; no gen.; pur 4.3 million kwh; rev. $200,000.

PATON Mun. Electric Dept., 50217, 515/968-4271, Arthur Subbert, supt.; 167 met.; no gen.

PAULLINA Mun. Utilities, 108 E. Commerce St., 51046, 712/448-3721, Ronald Chapman, supt. (1919); 685 met.; gen. 1,540 kw eng., 5,000 kwh; pur. 7.8 million kwh; rev. $240,000.

PELLA Mun. Power & Light, 717 Main St., 50219, 515/628-4173, James A. Wisse, supt. of elec. operations (1909); 3,671 met.; gen. 43,500 kw steam, 124.7 million kwh; pur. 3 million kwh; rev. $3,476,940.

POCAHONTAS Mun. Elec. Util., 14 Second Ave., N. W., 50574, 712/335-4841, Wilferd Schmeling, supt. (1912); 1,082 met.; no gen.; pur 12 million kwh; rev. $306,118.

PRESTON Mun. Light & Power, Box 37, 52069, 319/689-3081, Gary Driscoll, plant supt. (1939); 512 met.; gen. 4,257 kw eng., 182,600 kwh; pur. 8.6 million kwh; rev. $400,684.

PRIMGHAR Mun. Light Plant, 741-16th, 51245, 712/757-2435, Neil Bonderman, supt. (1939); 578 met.; gen. 1,500 kw eng., pur. 5.5 million kwh; rev. $252,324.

READLYN Elec. Dept., 50668, 319/279-3411, Alice Soldwisch, city clerk; no gen.

REMSEN Mun. Utilities, 51050, 712/786-2136, Louis A. Huewe, supt. (1933); 725 met.; gen. 1,440 kw eng.; pur. 8.8 million kwh; rev. $220,422.

RENWICK Mun. Light & Power Plant, Box 174, 50577, 515/824-3511, Galen Engstrom, supt. (1928); 389 met.; gen. 483 kw eng., 4,900 kwh; pur. 3.1 million kwh; rev. $85,374.

ROCKFORD Mun. Light Plant, 18 First St., 50468, 515/756-2215, J. Alfred Kitch, supervisor (1935); 501 met.; gen. 1,865 kw eng., 2.2 million kwh; pur. 2.6 million kwh; rev. $233,313.

ROCK RAPIDS, City of, Util. Div., 310 S. Third Ave., 51246, 712/472-3350, William G. Tobin, utils. mgr. (1896); 1,479 met.; gen. 2,750 kw eng., 18,480 kwh; pur. 23.2 million kwh; rev. $721,189.

ROLAND Light Dept., 50236, 515/388-4861, Paul Chalfant, supt.; no gen.

SABULA Mun. Electric System, 52070, 319/687-2420, C. B. Cotton, city mgr. (1914); 325 met.; no gen.; pur. 1.9 million kwh; rev. $52,000.

SANBORN Mun. Light Plant, Box J, 51248, 712/792-3974, Allen Bonderman, supt. (1947); 692 met.; gen. 1,464 kw eng.; pur. 11.4 million kwh; rev. $376,676.

SERGEANT BLUFF Mun. Light & Power, 51054, 712/943-4244, Roy Buchanan, supt.; no gen.

SEYMOUR Mun. Utilities, P.O. Box 54, 52590, 515/898-7146, Pat Stief, supt.; 528 met.; gen. 1,196 kw eng., pur. 4.7 million kwh; rev. $220,000.

SHELBY Mun. Electric Dept., Box 6, 51570, 712/544-2404, Lawrence Brown, supt.; 300 met.; no gen.

SIBLEY Mun. Utilities, 1108 Third Ave., 51249, 712/754-3454, Byron Lopau, supt. (1915); 1,933 met.; gen. 4,570 kw, 2,070 kw eng., 2,500 kw steam, 14 million kwh; pur. 18.6 million kwh; rev. $879,961.

SIOUX CENTER Mun. Utilities, 337 N. Main Ave., 51250, 712/722-0761, Harold Schiebout, supt. (1949); 1,674 met.; gen. 1,465 kw eng., 19,200 kwh; pur. 31.4 million kwh; rev. $1,010,414.

SPENCER Mun. Utilities, 712 N. Grand Ave., Box 110, 51301, 712/262-3027, Neal Drefke, gen. mgr. (1901); 6,000 met.; gen. 50,875 kw, 23,600 kw gas turbine, 7,047 kw steam, 20,228 kw hydro, 21.2 million kwh; pur. 100.1 million kwh; rev. $3,310,000.

STANHOPE Elec. Dept., 50246, 515/826-3290, Edward Haman, supt.; no gen.

STANTON Elec. Distribution System, 51573, 712/829-2613, Larry Johnson, supt. (1937); 281 met.; no gen.; pur. 4.7 million kwh; rev. $83,160.

STATE CENTER Mun. Electric Light Plant, 50247, 515/483-2590, Charles Utley, supt. (1893); 832 met.; gen. 5,800 kw eng., 7.4 million kwh; pur. none; rev. $185,583.

STORY CITY Mun. Electric Utility, 504 Broad St., 50248, 515/733-4691, Gene R. Twedt, supt. (1904); 1,412 met.; gen. 9,020 kw eng., 579,400 kwh; pur. 20.8 million kwh; rev. $1,028,032.

STRATFORD Light & Power, 50249, 515/838-2311, Mrs. Geraldine Conklin, city clerk (1920); 412 met.; no gen.; pur. 3 million kwh; rev. $71,000.

STRAWBERRY POINT Mun. Light Plant, Box 297, 52076, 319/933-4482, Ewald Maker, supt.; 761 met.; gen. 2,473 kw eng., 4.9 million kwh; pur. none; rev. $121,756.

STUART Mun. Utilities, Fremont St., Box 41, 50250, 515/523-2915, William Gilliam, supt. (1891); 924 met.; gen. 3,540 kw eng., 267,600 kwh; pur. 9.7 million kwh; rev. $343,111.

SUMNER Mun. Light Plant, 105 Wapsie, 50674, 515/578-5611, Robert Jergens, supt. (1935); 1,185 met.; gen. 5,300 kw eng., 1.7 million kwh; pur. 12.1 million kwh; rev. $469,266.

TENNANT Elec. Dept., 51574, 712/744-3757, Tom Hansen, mayor; no gen.

TIPTON, City of, 407 Lynn St., 52772, 319/886-6187, Donald Rosenow, elec. supt., (1916); 1,631 met.; gen. 2,600 kw eng., 306,800 kwh; pur. 18.7 million kwh; rev. $609,642.

TRAER Mun. Utilities, 649 Second St., 50675, 319/478-8760, Wilson A. Briggs, supt. (1917); 1,064 met.; gen. 4,450 kw eng., 7.9 million kwh; pur. 3.1 million kwh; rev. $316,907.

VILLISCA Mun. Power Plant, City Hall, 50864, 712/826-2282, Kenneth D. Higgins, supt. (1936); 1,020 met.; gen. 2,046 kw eng., 2,100 kwh; pur. 9.8 million kwh; rev. $209,396.

VINTON Mun. Electric, Second Ave. and Second St., 52349, 319/472-3663, Marvill K. Mostrom, supt.; 2,300 met.; gen. 9,785 kw eng., 20.6 million kwh; pur. none; rev. $464,000.

WALL LAKE Electric Department. 51466, 712/664-2216, Mary Herrig, city clerk (1903); 455 met.; no gen.; pur. 4.6 million kwh; rev. $102,000.

WAVERLY Mun. Electric Utility, 1500 W. Bremer Ave., 50677, 319/352-4252, ext. 22, Herbert G. Thayer, dir. of utils. (1904); 3,783 met.; gen. 16,690 kw, 16,195 eng., 495 kw hydro, 11.2 million kwh; pur. 65.5 million kwh; rev. $3,322,377.

WEBSTER CITY Mun. Light & Power Dept., Municipal Bldg., 50595, 515/832-4271, Joe K. Lukehart, city mgr. (1890); 4,204 met.; gen. 20,000 kw gas turbine, 8.7 million kwh; pur. 59.7 million kwh; rev. $3,079,665.

WEST BEND Mun. Light & Power Plant, N. Broadway, Box 411, 50597, 515/887-3111; James E. Schuller, supt. (1915); 657 met.; gen. 7,400 kw, 4,400 kw eng., 4.8 million kwh; pur. 7.3 million kwh; rev. $536,667.

WESTFIELD Elec. Dept., 51062, 712/568-2631, Ronald E. Burke, city clerk; no gen.

WEST LIBERTY Mun. Electric, W. 2nd St., 52776, 319/627-2418, (1900), 1,107 met.; gen. 7,000 kw eng., 207,000 kwh; pur. 32.5 million kwh; rev. $1,200,000.

WEST POINT Mun. Lighting Dept., 52656, 319/837-6313, Richard Pietz, supt.; no gen.

WHITTEMORE Mun. Power Plant, 50598, 515/884-2631, Mike Elbert, supt.; 300 met.; gen. 2,202 kw eng.

WILTON Mun. Light & Power 220 W. Third St., 52778, 319/732-2313, William D. Hartley, supt. (1891); 999 met.; gen. 4,335 kw eng., 81,930 kwh; pur. 12.4 million kwh; rev. $447,595.

WINTERSET Mun. Utilities, 321 N. First St., 50273, 515/462-2152, George C. Berry, supt. (1895); 1,800 met.; gen 8,400 kw eng., 7.7 million kwh; pur. 9.7 million kwh; rev. $350,000.

WOODBINE Mun. Light and Power, 517 Walker St., 51579, 712/647-2340, O. M. Dean, supt.; 1,055 met.; gen. 1,580 kw eng., 63,475 kwh; pur. 7 million kwh; rev. $136,181.

WOOLSTOCK Elec. Dept., 50599, 515/839-5710, Robert K. Kastler, mayor; no gen.

KANSAS

ALMA Electric System, 66401, 913/765-3922; 496 met.; no gen.; pur. 5.2 million kwh; rev. $201,231.

ALTAMONT, City of, Box 305, 67330, 316/784-5503, Charles Arb, supt. (1934); 477 met.; no gen.; pur. 5.7 million kwh; rev. $193,301.

ANTHONY, City of, 124 S. Bluff, Box 504, 67003, 316/842-5960, Jack C. Scott, supt. of utils., (1937); 1,965 met.; gen. 12,350 kw, 5,250 kw steam, 7,100 kw eng., 14.4 million kwh; pur. 8.2 million kwh; rev. $918,740.

ARCADIA Mun. Electric Dept., Box 126, 66711, 316/638-4310, James Yates, supt.; 223 met.; no gen.; pur. 1.3 million kwh; rev. $34,333.

ARMA, City of, 701 E. Washington, Box 438, 66712, 316/347-4125, James C. Jones, electrician; 760 met.; no gen.; pur. 7.2 million kwh; rev. $362,171.

ASHLAND Dept. of Light & Water, 703 Main St., 67831, 316/635-2531, Loren D. Mead, supt.; 690 met.; gen. 4,975 kw eng., 7.4 million kwh; pur. none; rev. $313,041.

ATTICA, City of, 101 N. Main, 67009, 316/254-7216, Michael Pfannenstiel, mayor; 450 met.; gen. 2,360 kw eng., 767,555 kwh; pur. 4.1 million kwh, rev. $229,134.

AUGUSTA Electric Dept., Box 489, 67010, 316/775-2391, James W. Rawlings, supt. gen. (1911); 3,210 met.; gen. 17,742 kw eng., 32.5 million kwh; pur. 7.1 million kwh; rev. $1,480,921.

AXTELL, City of, 66403, Glen Keegan, city clerk; 242 met.; no gen.; pur. 1.7 million kwh; rev. $72,423.

BALDWIN CITY Mun. Light & Water Dept., 316 Elm, 66006, William Randell, supt.; 996 met.; gen. 6,112 kw eng., 13.1 million kwh; pur. none; rev. $498,958.

BELLEVILLE Mun. Power, P.O. Box 280, 66935, 913/527-2288, Robert F. Leach, city mgr.; 1,566 met.; gen. 13,125 kw eng., 20.2 million kwh; pur. none; rev. $855,095.

BELOIT Mun. Power, 215 S. Chestnut, 67420, 913/738-5121, Deen Woods, supt. (1951); 2,067 met.; gen. 19,900 kw eng., 36.3 million kwh; pur. 30,200 kwh; rev. $343,037.

BLUE MOUND Mun. Distribution System, 66010, Lloyd Spillman, elec. supt.; 190 met.; no gen.; pur. 1.3 million kwh; rev. $63,580.

BRONSON Mun. Light & Power, 66716, 316/939-4578, Harold Johnson, supt. (1926); 205 met.; no gen.; pur. 1.2 million kwh; rev. $22,800.

BURLINGAME Power & Light Dept., 66413, 913/654-3922, Norman Bloomquist, plant supt.; 610 met.; gen. 3,984 kw eng., 6.9 million kwh; rev. $343,143.

BURLINGTON Mun. Light & Power Dept., City Hall, Eleventh and Niagara, 66839, 316/364-5575, Alfred M. Mann, supt. (1935); 1,384 met.; gen. 3,620 kw eng., 2.0 million kwh; pur. 11.9 million kwh; rev. $706,937.

CAWKER CITY Mun. Elec. Dept., 804 Locust St., 67430, 913/781-4713, Donald Kincheloe, city supt. (1913); 400 met.; no gen.; pur. 3.5 million kwh; rev. $153,449.

CENTRALIA Mun. Light System, 66415, 913/857-3764, Paul Elliott, supt.; 262 met.; no gen.; pur. 2.3 million kwh; rev. $121,623.

CHANUTE, City of, P.O. Box 907, 66720, 316/431-0306, Ronald L. Reed, dir., elec. util. (1903); 6,517 met.; gen. 22,000 kw, 16,500 kw steam, 5,500 kw eng., 65.2 million kwh; pur. 19.3 million kwh; rev. $3,440,321.

CHAPMAN Mun. Elec. Light & Water Dept., 108 E. 4th St., 67431, Albert DeWitt, supt.; 566 met.; no gen.; pur. 5.7 million kwh; rev. $263,196.

CHETOPA, City of, 67336, 316/236-7541, Dale Darnell, plant supt.; 745 met.; no gen.; pur. 7.1 million kwh; rev. $175,505.

CIMARRON, City of, Box 256 67835, 316/855-2215, Vernon Hanna, city supt.; 640 met.; no gen.; pur. 10.9 million kwh; rev. $477,199.

CLAY CENTER, City of, Public Utils., 427 Court St., 67432, 913/632-2137, D. D. Dierking, supt. of util. (1907); 2,938 met., gen. 14,500 kw, 9,500 kw steam, 7,900 kw eng., 38.1 million kwh; pur. 9.4 million kwh; rev. $1,626,129.

COATS Elec. Dept., 67028, Larry Flory, city clerk; no gen.

COFFEYVILLE Mun. Light & Power, Seventh and Spring Sts., Box 498, 67337, 316/251-7000, Jim Page, city mgr. (1901); 8,046 met.; gen. 80,500 kw steam, 142.3 million kwh; pur. 36 million kwh; rev. $5,159,446.

COLBY Dept. of Public Power, 585 N. Franklin, 67701, 913/462-3973, Lennart A. Jorgensen, dir. of public power, (1910); 2,599 met.; gen. 18,800 kw eng., 24.4 million kwh; pur. 10.9 million kwh; rev. $1,606,326.

DeSOTO, City of, 108 W. Second St., Box C, 66018, 913/585-1182, Robert Triebel, supt. pub. wks.; 743 met.; no gen.; pur. 9.2 million kwh; rev. $502,404.

DIGHTON Mun. Light & Water Dept., 147 E. Long St., 67839, 316/397-5541, Lawrence McKinney, supt.; 780 met.; no gen.; pur. 8.1 million kwh; rev. $483,585.

ELLINWOOD Light and Water Dept., One N. Main, 67526, Andrew L. Riedel, supt.; 1,325 met.; gen. 8,479 kw eng., 10 million kwh; pur. none; rev. $635,198.

ELLIS Mun. Elec. & Water System, W. 6th St., Box 24, 67637, 913/726-4741, Carrol Weber, supt. (1915); 963 met.; gen. 6,085 kw eng., 9.2 million kwh; pur. none; rev. $423,000.

ELWOOD Electric Dept., 66024, 916/223-6871, S. R. Reed, Jr., supt.; 450 met.; no gen.; pur. 4.3 million kwh; rev. $97,041.

ENTERPRISE Mun. Lighting System, 67441, 913/934-2323; 400 met.; no gen.; rev. $97,404.

ERIE Mun. Light & Power, 224 S. Main, Box 196, 66733, 316/244-3611 (1915); 730 met.; gen. 3,565 kw eng., 7.1 million kwh; pur. 7.3 million kwh; rev. $451,460.

EUDORA Mun. Electric Dept., Seventh and Main, 66025, 913/542-2095, John Pinnick, supt.; 1,026 met.; no gen.; pur. 10.8 million kwh; rev. $552,804.

FREDONIA Mun. Power Plant, 314 N. Seventh St., 66736, 316/378-2231, Calvin Studebaker, supt.; 1,670 met.; gen. 3,410 kw eng., 789,000 kwh; pur. 30.8 million kwh; rev. $504,481.

GALVA Electric Dept., Box 223, 67443, 316/654-2173, Vernon R. Koehn, city supt.; 327 met.; no gen.; pur. 2.8 million kwh; rev. $101,794.

GARDEN CITY Electric Dept., Box 499, 67846, 316/276-2601, Fred Saunders, supt.; 7,022 met.; gen. 12,500 kw steam; pur. 106 million kwh; rev. $3,701,368.

GARDNER Mun. Electric Plant, 112 S. Elm St., 66030, 913/884-7535, Richard A. McNett, supt.; 1,054 met.; no gen.; pur. 15 million kwh; rev. $543,000.

GARNETT, City of, 131 W. Fifth, 913/448-5496, R. G. Doran, city mgr. (1918); 1,839 met.; gen. 7,030 kw eng., 9.4 million kwh; pur. 10.1 million kwh; rev. $909,013.

GIRARD Mun. Light & Water Plant, 100 S. Ozark, 66743, 316/724-8918, Eugene Wilson, util. comm.; 1,532 met.; gen. 7,735 kw eng.; pur. 21 million kwh; rev. $839,933.

GLASCO, City of, 67445, W. LeRoy Wolf, city supt.; 418 met.; no gen.; pur. 3.5 million kwh; rev. $158,955.

GLEN ELDER Electric Dept., S. Market St., 67446, 913/545-3322, Ray Howland, supt.; 315 met.; no gen.; pur. 2.9 million kwh; rev. $173,484.

GOFF Electric Dept., 66428, 913/939-2770, Larry Hicks, mayor; 110 met.; no gen.; pur. 592,000 kwh; rev. $24,647.

GOODLAND Mun. Electric Dept., 17th and Cherry, Box 57, 67735, 913/899-5200, Pete Walker, supt.; 2,557 met.; gen. 16,703 kw eng., pur. none; rev. $1,638,583.

GREENSBURG Water and Electric, 239 S. Main, 67054, 316/723-2301, Lloyd Clark, supt.; 1,046 met.; gen. 7,046 kw eng., 11.3 million kwh; pur. none; rev. $496,808.

HAVEN Light & Water Power Plant, 67543, Ed Geffert, elec. engr.; 536 met.; no gen.; pur. 8.6 million kwh; rev. $218,815.

HERINGTON Mun. Water & Electric Dept., 715 S. Broadway, 67449, 913/258-2271, W. A. Wetmore, dir. of utils.; (1888); 1,739 met.; gen. 9,700 kw eng., 20.1 million kwh; pur. 48,166 kwh; rev. $1,142,491.

HERNDON Mun. Electric System. 67739, 913/322-5341, Charles Adams, Mayor; 173 met.; no gen.; pur. 870,000 kwh; rev. $74,548.

HILL CITY Mun. Power Plant, South Pomeroy, 67642, 913/674-5613, Richard Cramer, city adm., 1,020 met.; gen. 7,265 kw eng., 13.5 million kwh; pur. none; rev. $765,347.

HILLSBORO Electric Utility, 116 E. Grand, 67063, 316/947-3262, Jack Heuback, city admin. (1948); 1,172 met.; gen. 6,020 kw eng., 6.2 million kwh; pur. 12.9 million kwh; rev. $531,365.

HOISINGTON Mun. Electric Utility, Box 418, 67544, 316/653-4125, Harold Tarlton, city mgr. (1939); 1,860 met.; gen. 15,980 kw eng., 19.8 million kwh; pur. none; rev. $795,768.

HOLTON Mun. Light, Water & Power, 66436, Willis Moore, supt.; 1,844 met.; gen. 14,600 kw eng., 16.6 million kwh; pur. 4.2 million kwh; rev. $925,067.

HOLYROOD Light & Water Dept., 110 S. Main, 67450, Tom Randolph, supt. (1918); 350 met.; no gen.; pur. 2 million kwh; rev. $59,756.

HORTON Water and Electric, E. Fifteenth St., 66349, 913/486-3911, Cleo N. Coffman, chief engr. (1912); 1,115 met.; gen. 5,865 kw eng., 5 million kwh; rev. $398,851.

HUGOTON City Water & Light Dept., 114 E. Fifth St., Box 788, 67951, 316/544-8531, Everett Rowden, supt. (1919); 1,623 met.; gen. 13,470 kw eng., 20.3 million kwh; pur. none; rev. $849,580.

IOLA Mun. Electric, 2 W. Jackson, Box 308, 66749, 316/365-2771, J. A. Wilson, supt. (1900); 3,625 met.; gen. 23,250 kw, 9,500 kw steam, 13,750 kw eng., 8.7 million kwh; pur. 49.5 million kwh; rev. $1,801,548.

ISABEL City Electric Dept., City Hall, 67065, Carolyn Armstrong, city clerk; 72 met.; no gen.; pur. 578,700 kwh; rev. $17,988.

JETMORE, City of, Public Municipality, Box 8, 67854, 316/357-8344, Elmer Hickey, supt.; 588 met.; gen. 5,950 kw eng., 6.1 million kwh; pur. none; rev. $392,050.

JOHNSON City Electric Dept., Box 387, 67855, 316/492-2322, Roy Collings, supt. (1938); 630 met.; gen. 3,725 kw eng., 9 million kwh; pur. 2.5 million kwh; rev. $457,900.

KANSAS CITY Board of Public Utilities, 700 Minnesota Ave., 66101, 913/281-8145, Melvin Heuer, actg. mgr. of prod. and dist. (1929); 67,983 met.; gen. 576,100 kw, 456,000 kw steam, 120,100 kw gas turbine, 2.1 million kwh; pur. 207,007 kwh; rev. $57,360,953.

KINGMAN Water and Light Dept., Box 168, 67068, 316/532-3111, Ben M. Payton, supt. (1913); 1,580 met.; gen. 13,260 kw eng., 28 million kwh; pur. none; rev. $1,068,593.

KIOWA 67070, 316/825-4124, Bill Harlow, supt.; (1976); 785 met.; no gen.; pur. 11.5 million kwh; rev. $581,904.

LA CROSSE Mun. Electric Dept., Box K, 67548, 913/222-2511, John Walker, supt.; 879 met.; gen. 5,885 kw eng., 9.3 million kwh; pur. 217,000 kwh; rev. $378,732.

LA HARPE Water & Light Dept., 66751, 316/496-2241, James Prock, supt.; 265 met.; no gen.; pur. 1.4 million kwh; rev. $29,889.

LAKIN Electric Dept., Box 148, 67860, 316/355-6252, John Speer, city supt. (1915); 830 met.; no gen.; pur. 8.5 million kwh; rev. $435,582.

LARNED, City of, Box 70, 67550, 316/285-3544, Ron Arnold, supt. (1916); 2,561 met.; gen. 20,460 kw, 12,760 kw steam, 6,450 kw eng., 1,250 kw gas turbine, 30.8 million kwh; pur. 5.1 million kwh; rev. $1,481,926.

LINCOLN Light Dept., 67455, 913/524-4280, Dan Smith, supt.; 954 met.; gen. 5,300 kw eng., 10.8 million kwh; pur. none; rev. $274,870.

LINDSBORG Water & Light Dept., 103 S. Main St., Box 70, 67456, Alden Shields, city admin.; 1,129 met.; gen. 6,892 kw eng., 15.5 million kwh; pur. 2.6 million kwh; rev. $528,693.

LUCAS Mun. Electric System, Box 217, 67648, Gary Ward, supt.; 325 met., no gen.; pur. 2.9 million kwh; rev. $140,964.

LURAY, City of, 67649, Kirkendoll, supt.; 182 met.; no gen.; pur. 1.6 million kwh; rev. $84,234.

MAHASKA City Electric Dept., 66955, Wayne Graham, supt.; 74 met.; no gen.; pur. 483,000 kwh; rev. $21,565.

MANKATO Mun. Light Dept., 210 N. Commercial, 66956, 913/378-3141, D. L. Hamilton, city admin. (1950); 753 met.; no gen.; pur. 7.2 million kwh; rev. $332,259.

MARION Mun. Water & Light Plant, Box 30, 66861, 316/382-2460, Lucille Britain, city clerk; 1,075 met.; no gen.; pur. 11.2 million kwh; rev. $526,517.

McPHERSON Board of Pub. Utilities, 400 E. Kansas, Box 1008, 67460, 316/241-0661, Donald E. Gerard, gen. mgr. (1909); 6,539 met.; gen. 216,000 kw, 48,000 kw steam, 168,000 kw gas turbine, 1,000 kw eng.; 153.4 million kwh; pur. 277.2 million kwh; rev. $13,145,530.

MEADE Mun. Power Plant, 67874, 316/873-2091, Douglas Fisher, city supt. (1910); 1,400 met.; gen. 10,000 kw eng., 14 million kwh; pur. 4 million kwh; rev. $1,000,000.

MINNEAPOLIS Mun. Light, Water & Power Dept., 101 W. Second St., 67467, Leo Baker, supt.; 977 met.; gen. 8,174 kw eng., 10.6 million kwh; pur. 2.1 million kwh; rev. $472,854.

MONTEZUMA Water and Light Dept., 67867, Dwight Watson, city supt.; 342 met.; no gen.; pur. 5.4 million kwh; rev. $240,804.

MORAN, City of, Box 396, 66755, 316/237-4301, James Cole, supt. (1900); 370 met.; no gen.; pur. 3.7 million kwh; rev. $150,706.

MORRILL Mun. Light System, Box 146, 66515, 913/459-2231, Ricci V. Speers, supt.; 176 met.; no gen.; pur. 1.3 million kwh; rev. $51,520.

MOUNDRIDGE, City of, 216 S. Christian, 67107, Jim Gehring, city adm. (1909); 642 met.; no gen.; pur. 10.7 million kwh; rev. $332,565.

MOUNT HOPE Mun. Elec. System, 67108, Ford Hicks, supt.; 300 met.; no gen.; pur. 465,600 kwh; rev. $104,640.

MULBERRY Mun. Light Plant, 66756, 316/764-3815, Howard Nichols, supt. (1915); 333 met.; no gen.; 1.2 million kwh; rev. $69,275.

MULVANE Mun. Light & Water Dept., 67110, Gary Rambo, supt.; 1,413 met.; gen. 6,270 kw eng., 20.6 million kwh; rev. $765,463.

MUSCOTAH Mun. Electric Dept., 66058, Gene Maur, supt.; gen. 7,235 kw eng., 10.7 million kwh; pur. none; rev. $253,812.

NEODESHA Light & Power, West Main St., 66757, 316/325-2925, Charles A. Koger, mayor; 1,945 met.; gen. 9,150 kw eng., 2.6 million kwh; pur. 25.3 million kwh; rev. $1,011,046.

NETAWAKA Electric Light System, 66515, Kenneth Keithline, city clerk; 84 met.; no gen.; pur. 660,600 kwh; rev. $27,265.

NORTON Mun. Light & Water Plant, 301 E. Washington, 67654, 913/877-3355, Emery C. Graves, city supt.; 1,776 met.; gen. 11,000 kw eng., 21.2 million kwh; pur. none; rev. $855,000.

OAKLEY Mun. Light Plant, 400 Price Ave., Box 116, 67748, 912/672-3612, Francis D. Salisbury, city supt. (1913); 1,238 met.; gen. 8,346 kw eng., 15.6 million kwh; pur. none; rev. $493,726.

OBERLIN Electric Dept., 67749, Phil Cramer, city supt.; 1,100 met.; gen. 7,175 kw eng., 14.9 million kwh; pur. none; rev. $646,721.

OSAGE CITY Mun. Light Plant, Fifth and Main Sts., 66523, 913/528-1851; 1,410 met.; gen. 7,155 kw eng., 15.2 million kwh; pur. none; rev. $728,917.

OSAWATOMIE Electric Utility, City Hall, Fifth and Main Sts., 66064, 913/755-4138, James D. Smith, supt. of prod.; 1,908 met.; gen. 7,000 kw eng., 1.8 million kwh; pur. 19.9 million kwh; rev. $1,048,092.

OSBORNE, City of, 133 W. Main St., 67473, 913/346-5611, Bob Basgall, city supt.; 1,125 met.; gen. 6,825 kw eng., 11.7 million kwh; pur. 2.8 million; rev. $63,159.

OSWEGO Mun. Light Dept., 703 Fifth St., 67356, 316/795-4433, Rufus M. Monroe, administrator (1888); 1,053 met.; no gen.; pur. 13.2 million kwh; rev. $544,515.

OTTAWA Power Plant, Fourth and Walnut, 66067, 913/242-2190, Jack E. Davis, dir. utils. (1906); 5,089 met.; gen. 24,100 kw, 6,900 kw steam, 10,000 kw gas turbine, 7,200 kw eng., 56.9 million kwh; pur. 17.7 million kwh; rev. $2,761,589.

OXFORD Mun. Electric Dept., 67119, Buddy D. Spence, supt.; 557 met.; no gen.; pur. 7.1 million kwh; rev. $282,207.

POMONA City Light Dept., Box 67, 66076, 913/566-3522, Richard Stoneking, supt.; 475 met.; no gen.; pur. 4.2 million kwh; rev. $172,515.

PRATT Mun. Power Plant, RR #2, 67124, 316/672-2022, Arlyn Bradford, supt. (1910); 4,000 met.; gen. 23,500 kw, 22,000 kw steam, 1,500 kw eng., 50 million kwh; pur. 5 million kwh; rev. $2,000,000.

PRESCOTT City Electric Dept., 66767, 913/471-2421, Jim Wood, mayor (1921); 153 met.; no gen.; pur. 1.2 million kwh; rev. $52,876.

PROTECTION Mun. Power Plant, Box 7, 67127, 316/622-4696, Dan McGee, supt. (1917); 431 met.; gen. 2,885 kw eng., 4.8 million kwh; pur. none; rev. $269,445.

RADIUM Light Dept., 67571, 316/982-4695, John Paden, city clerk; 35 met.; no gen.

RESERVE Light Dept., 66529, Richard Koch, util. supt.; 66 met.; no gen.; rev. $17,190.

ROBINSON Electric Dept., 66532, Ethel McCauley, city clerk; 157 met.; no gen.; pur. 1.2 million kwh; rev. $54,330.

RUSSELL, City of, Box 112, 67665, 913/483-2230, Earl Homewood, dir. (1910); 3,645 met.; gen. 20,893 kw eng., 56.1 million kwh; pur. none; rev. $2,112,899.

SABETHA Mun. Light Dept., 66534, Melvin Mowder, pur. agt.; 1,414 met.; gen. 8,818 kw eng., 20 million kwh; pur. none; rev. $598,512.

ST. FRANCIS Mun. Water & Light, 67756, 913/332-3031, Bernard C. Roelfs, city supt. (1914); 950 met.; gen. 5,200 kw eng., 9.3 million kwh; pur. none; rev. $492,501.

ST. JOHN Mun. Light & Water, 67576, 316/549-3800, Ivan J. Book, power plant supvr., (1910); 955 met.; gen. 3,225 kw, 3.9 million kwh; pur. 4.4 million kwh; rev. $419,158.

ST. MARY'S Mun. Light & Water Dept., Box 146, 66536, 913/437-2311, Don Burrous, supt. (1908); 803 met.; no gen.; pur. 10.2 million kwh; rev. $524,548.

SAVONBURG Electric Light Dept., 66772, John McMurray, supt.; 63 met.; no gen.; pur. 311,200 kwh; rev. $21,005.

SCRANTON, City of, 66537, Albert Crable, supervisor; 281 met.; no gen.; pur. 2.2 million kwh; rev. $98,418.

SENECA City Electric, Box 40, 66538, 913/336-3537, Frank Rusche, elec. supt.; (1914); 1,189 met.; no gen.; pur. 15 million kwh; rev. $504,366.

SEVERANCE Elec. Dept., 66081, Leo Zeltner, city clerk; 52 met.; no gen.; pur. 358,000 kwh; rev. $10,624.

SEWARD Elec. Dept., 67577, Willard F. Lang, supt.; 43 met.; no gen.

SHARON SPRINGS, City of, Box 490, 67758, 913/852-4232, Norman L. (Pete) Sharp, supt. (1915); 559 met.; gen. 3,117 kw eng., 5.9 million kwh; pur. none; rev. $330,385.

STAFFORD Mun. Power Plant, 519 S. Boston, 67578, 316/234-5561, John W. Rice, plant supt.; 884 met.; gen. 3,915 kw eng., 5.8 million kwh; pur. 2.9 million kwh; rev. $497,959.

STERLING Mun. Light & Power Dept., Box 287, 67579, 316/278-3411, Stan B. Stewart, city mgr., (1899); 1,111 met.; gen. 5,840 kw eng., 10.6 million kwh; pur. 1.5 million kwh; rev. $651,419.

STOCKTON Mun. Light & Power Plant, Box 184, 67669, 913/425-6703, Clark I. Stocking, city mgr. (1908); 1,003 met.; gen. 6,273 kw eng., 11.5 million kwh; pur. none; rev. $477,972.

SUMMERFIELD Water & Elec. Dept., 66541, Wayne Richardson, city clerk; no gen.

TIPTON Electric Distribution System, 67485, Harold Hollerich, supt.; 123 met.; no gen.; pur. 1.2 million kwh; rev. $100,893.

TORONTO Mun. Light Plant, 66777, Clyde Boone, supt.; 300 met.; no gen.; pur. 2.1 million kwh; rev. $100,417.

TROY Water & Light Dept., 66087, H. L. Clary, supt.; 597 met.; no gen.; pur. 5.2 million kwh; rev. $223,589.

UDALL Water & Light Dept., 67146, Corbett Wilson, supt.; 303 met.; no gen.; rev. $154,315.

VERMILLION, City of, 66544, Don White, supt.; 103 met.; no gen.; rev. $28,353.

WAMEGO Light & Water, Box 86, 66547, 913/456-9119, William B. Owens, city mgr. (1908); 1,652 met.; 8,320 kw eng., 14.6 million kwh; pur. 5.7 million kwh; rev. $707,210.

WASHINGTON Mun. Light Plant, Park Road, 66968, 913/325-2231, John Walker, city supt. (1938); 812 met.; gen. 5,961 kw eng., 8.8 million kwh; pur. 4 million kwh; rev. $432,305.

WATERVILLE Mun. Light & Water Plant, 66548, Carl T. Hanson, util. supt.; 392 met.; no gen.; pur. 3.6 million kwh; rev. $134,154.

WATHENA Mun. Electric Lighting System, 66090, Darlene Meidinger, city clerk; 600 met.; pur. 5.6 million kwh.

WEBBER Elec. Dept., 66970, Norma Thomas, city clerk; no gen.

WELLINGTON, City of, Utilities, 202 N. Washington, 67152, 316/326-3631, Lewis T. Basinger, plant supvr. (1902); 4,063 met.; gen. 35,000 kw, 34,000 kw steam, 1,000 kw eng., 58.8 million kwh; pur. 23 million kwh; rev. $2,988,020.

WILLIS Elec. Dept., 66435, Maurice Fletcher, Mayor; 48 met.; no gen.; pur. 169,980 kwh; rev. $6,009.

WILSON Mun. Light Plant, 67490, 913/658-4444, (1910); 516 met.; gen. 5,000 kw eng., 5.2 million kwh; pur. none; rev. $246,186.

WINFIELD Electric Utility, 200 E. Ninth St., Box 646, 67156, 316/221-2183, John W. Elder, dir., David Warren, city mgr. (1904); 6,871 met.; gen. 56,000 kw, 45,000 kw steam, 11,000 kw gas turbine, 77.6 million kwh; pur. 44.5 million kwh; rev. $4,661,545.

KENTUCKY

(Systems designated "TVA" are distributors of Tennessee Valley Authority power and purchase all of their power from TVA.)

BARBOURVILLE Mun. Water & Elec. Co., City Hall Bldg., 40906, Randall Young, supt.; 2,700 met.; no gen.

BARDSTOWN Mun. Electric Light & Power Plant, 220 N. Fifth St., 40004, 502/348-5947, Larry Hamilton, mgr.; 2,100 met.; no gen.

BARDWELL City Utilities, Box 277, 42023, 502/628-3833, Harry C. Ward, mgr. (1941); 564 met.; no gen.; pur. 5.7 million kwh; rev. $161,121.

BENHAM City Utilities, City Hall, 40807, Malcolm Barr Sr.

BENTON Electric System, Box 124, 42025, 502/527-3666, Jim Owens, mgr. (1941); 2,007 met.; pur. 47.5 million kwh; rev. $1,606,275. (TVA)

BEREA College Electric Utility, CPO 2337, 40404, 606/986-4611, Donald Bewley, util. adm.; 3,201 met.; pur. 70 million kwh, rev. $2,165,119.

BOWLING GREEN Mun. Utilities, 801 Center St., Box 478, 42101, 502/782-1200, Henry T. Carlisle, Jr., gen. mgr. (1942); 15,652 met.; pur. 484.4 million kwh; rev. $11,585,098. (TVA)

CORBIN City Util. Commission, 901 S. Main St., 40701, George P. Rains, gen. supt.; 3,342 met.; no gen.; pur. 25.8 million kwh; rev. $551,706.

FALMOUTH City Utilities, 41040, Max Goldoerg, mayor.

FRANKFORT Electric and Water Plant Bd., 315 W. Second St., Box 308, 40601, 502/223-3401, John C. Wagner, gen. mgr. (1943); 14,316 met.; no gen.; pur. 332 million kwh; rev. $7,415,185.

FRANKLIN Electric Plant Bd., 309 N. High St., 42134, 502/586-4441, John T. Butts, supt. (1943); 3,658 met.; pur. 130.5 million kwh; rev. $4,080,535. (TVA)

FULTON Electric System, 101 Nelson Tripp Place, Box 130, 42041,

502/472-1362, Billy Moss, supt., (1962); 1,782 met.; pur. 42.7 million kwh; rev. $1,464,684. (TVA)

GLASGOW Electric Plant Bd., 100 Mallory Drive, 42141, 502/651-8341, C. Paul White, gen. mgr. (1962); 5,436 met.; pur. 207 million kwh; rev. $6,423,105. (TVA)

HENDERSON Mun. Power & Light, Box 8, 42420, 502/826-2726, Bill L. Perry, gen. mgr. (1897); 9,987 met.; gen. 393,051 kw, 390,591 kw steam, 2,460 kw eng., 2,244.1 million kwh; pur. none; rev. $7,888,569.

HICKMAN Electric Plant Board, Exchange St., 42050, 502/236-2630, James Eakes, mgr. (1970); 1,375 met.; pur. 18 million kwh; rev. $572,373. (TVA)

HOPKINSVILLE Electric Plant Bd., 101 N. Main St., 42240, 502/886-3303, W. Howell Hightower, supt. (1942); 12,100 met.; pur. 321.2 million kwh; rev. $9,544,391. (TVA)

MADISONVILLE Mun. Light & Water Plant, E. Center St., Box 704, 42431, 502/821-0903, J. T. Tarpley, supt. (1922); 7,526 met.; no gen.; pur. 153.5 million kwh.

MAYFIELD Electric & Water Systems, 301 E. Broadway, 42066, 502/247-4661, Joe E. Rister, gen. supt. (1942); 5,454 met.; pur. 116.5 million kwh; rev. $3,226,856. (TVA)

MONTICELLO Electric Plant Bd., 615 Columbia Ave., 42633, 606/348-8102, James H. McCune, supt., (1960); 2,697 met.; pur. 61.9 million kwh; rev. $1,882,741. (TVA)

MURRAY Electric System, 401 Olive St., Box 391, 42071, 502/753-5312, William M. Barker, supt. (1942); 6,500 met.; pur. 214.9 million kwh; rev. $6,126,708. (TVA)

NICHOLASVILLE, City of, Electric Dept., 517 N. Main St., Box 158, 40356, 606/885-9473, David House, mgr.; 3,900 met.; no gen. rev. $1,892,000.

OLIVE HILL Mun. Light Plant, 41164, Charles Helvey, supt.

OWENSBORO Mun. Utilities, 115 E. Fourth St., Box 806, 42301, 502/926-3200, John P. Pace, gen. mgr. (1900); 23,000 met.; gen. 415,000 kw steam, 461.3 million kwh; pur. none; rev. $12,800,000.

PADUCAH Power System, 1400 Broadway, P.O. Box 180, 42001, 502/442-2711, W. L. Borgerding, gen. mgr. (1961); 19,821 met.; pur. 430.3 million kwh; rev. $15,008,854. (TVA)

PARIS, City of, 800 Pleasant St., 40361, 606/987-2630, Ronald K. Bailey, supt. div. of elec. util.; (1931); 2,130 met.; gen. 11,000 kw eng., 1 million kwh; pur. 27.4 million kwh; rev. $607,542.

PRINCETON Electric Plant Bd., Legion Drive, Box 608, 42445, 502/365-2031, Walter R. Smith, supt. (1961); 3,796 met.; no gen.; pur. 64.1 million kwh; rev. $2,361,135. (TVA)

PROVIDENCE Mun. Light & Water Plant, North Willow St., Box 128, 42450, 502/667-5463, William C. Villines, Mayor (1921); 1,962 met.; no gen.; pur. 17.9 million kwh; rev. $567,545.

RUSSELLVILLE Electric Plant Bd., 165 E. Fourth St., 42276, 502/726-2466, George M. Wheeler, supt. (1942); 3,486 met.; pur. 99.6 million kwh; rev. $2,935,003. (TVA)

VANCEBURG Electric Light, Heat & Power Systems, 607 Front St., 41179, 606/796-2641, William T. Love, supt. (1939); 2,550 met.; no gen.; pur. 24.4 million kwh; rev. $856,387.

WILLIAMSTOWN Utility Comm., Main St., 41097, William T. Caldwell, supt.; no gen.

LOUISIANA

ABBEVILLE Water & Light Plant, 717 Veteran Memorial Dr., 70510, Joseph E. Vise, supt.; 4,300 met.; no gen.; pur. 62 million kwh; rev. $3,154,085.

ALEXANDRIA Mun. Power & Light Dept., City Hall, 1011 N. Third, Box 71, 71301, 318/442-8801, Carroll Lanier, mayor, (1907); 22,377 met.; gen. 200,000 kw steam, 442 million kwh; pur. 3.3 million kwh; rev. $7,774,304.

BOYCE Mun. Water & Light Plant, 71409, Arthur Valentine, supt.; 350 met.; gen. 700 kw eng.

ERATH City Electric Dept., 115 W. Edwards, 70533, 318/937-4401; Dr. Leon G. Swire, mayor; 750 met.; no gen.; pur. 9.5 million kwh.

FRANKLIN (Central Louisiana Electric Co.'s (CLECO) proposal to operate and possibly obtain ultimate ownership of the Franklin system was approved by Franklin voters Aug. 23, 1980. CLECO assumed administration of the system in October.)

GUEYDAN Mun. Plant, 70542, James Smith, supt.; 748 met.; no gen.

HOUMA, City of, Box 6097, 70361, 504/868-5050, John E. Carlson, Jr., city elec. engr. (1923); 8,600 met.; gen. 108,800 kw, 20,200 kw eng., 80,600 kw steam, 8,000 kw gas turbine, 210.2 million kwh; pur. none; rev. $5,846,532.

JONESVILLE Power & Light Dept., Box 428, 71343, 318/339-2051, Ted Husser, supt.; 1,100 met.; no gen.; pur. 30 million kwh.

KAPLAN Mun. Water & Light Plant, 70548, Newton Bercier, supt.

LAFAYETTE Utilities Systems, 1830 Walker Rd., 70502, 318/233-6611, Roy Hebert, dir. (1897); 30,020 met.; gen. 362,065 kw steam, 1.6 billion kwh; pur. none; rev. $14,594,725.

MINDEN Light & Water Dept., Box 580, 71055, 318/377-2144, Gordon Barthage, supt.; 6,000 met.; gen. 38,000 kw, 25,000 kw steam, 13,000 kw eng., 19.5 million kwh; pur. 92.5 million kwh; rev. $3,451,042.

MORGAN CITY Mun. Power Plant, 808 Florence St., Box 1218, 70380, 504/385-0500, Joseph J. Cefelu, supt. (1934); 6,374 met.; gen. 75,900 kw, 67,000 kw steam, 8,900 kw eng., 157 million kwh; pur. 347,000 kwh; rev. $5,037,000.

NATCHITOCHES Light & Water Plant, Box 37, 71457, 318/352-2901, Robert J. Tynes, dir. utils. (1901); 5,432 met.; gen. 55,000 kw, 46,000 kw steam, 9,000 kw eng., 122 million kwh; pur. none; rev. $2,700,000.

NEW ROADS Mun. Light & Water Dept., 70760, Roy E. Davis, supt.; no gen.

OPELOUSAS Electric & Water System, Box 385, 70570, Riley Reed, supt.; 5,890 met.; no gen.; rev. $4,674,459.

PLAQUEMINE City Light & Water Plant, City Hall, 70764, 504/687-6150, C. A. Gascon, Jr., mgr., 6,400 met.; gen. 9,000 kw eng.; rev. $1,168,601.

RAYNE Mun. Utilities, Box 87, 70578, 318/334-4170, C. C. Hargis, acting dir. (1903); 3,303 met.; gen. 12,000 kw eng., 48 million kwh; pur. 24 million kwh.

RUSTON Util. System, Box 280, 71270, 318/255-1316, Max W. Albritton, supt. (1905); 6,647 met.; gen. 89,000 kw, 81,000 kw steam, 8,000 kw eng., 157 million kwh; rev. $6,936,889.

ST. MARTINVILLE Mun. Electric Dept., 70582, Thomas J. Lovas, supt.

VIDALIA Mun. Utilities, 409 Texas St., 71373, 318/336-5206, Lovice B. Beard, mgr. (1905); 2,352 met.; no gen.; pur. 31.6 million kwh; rev. $745,368.

VINTON Electric Light Dept., 1200 Horridge St., Box 278, 70668, 318/589-7453, E. L. Bahnsen, supt. pub. works (1910); 1,500 met.; no gen.; pur. 20 million kwh; rev. $683,000.

WELSH Utility Dept., Box 786, 70591, 318/734-2231, Robert J. Louviere, supt. pub. works (1926); 1,322 met.; no gen.; pur. 19.6 million kwh; rev. $543,955.

WINNFIELD Electric & Water Plant, 71483, J. D. Jones, gen. mgr.; 2,800 met.

MAINE

BANGOR Util. Div., Pierce St., Bldg. 400, Bangor International Airport, 04401, 207/942-0177, John Steward, head, elec. dept. (1890); 28 met. (municipal service) gen. 300 kw hydro.

HOULTON Water Co., 21 Bangor St., 04730, 207/532-2259, Paul W. Coleman, gen. mgr., (1885); 4,475 met.; no gen.; pur. 49.9 million kwh; rev. $2,030,532.

KENNEBUNK Light & Power Dist., 36 Water St., 04043, 207/985-3311, Phillip R. Davis, gen. mgr. (1903); 2,813 met.; gen. 150 kw hydro, 189,114 kwh; pur. 46.6 million kwh; rev. $1,434,692.

LEWISTON Mun. Electric Plant, Island Ave., 04240, 207/782-8511, Roger Simpson, supt.; gen. 700 kw hydro, 5.5 million kwh. Municipal use only.

LUBEC Water & Electric Dist., 24 Water St., 04652, 207/733-5583, Robert B. Miller, mgr. (1901); 1,180 met.; no gen.; pur. 8.5 million kwh; rev. $421,104.

MADISON Electric Works, 26 Weston Ave., Box 190, 04950, 207/696-4401, Norman E. Sawyer, supt. (1897); 1,900 met.; gen. 525 kw hydro, 3 million kwh; pur. 18.3 million kwh; rev. $504,958.

VAN BUREN Light & Power Dist., 67 Main St., 04785, 207/868-3321, M. Reginald Michaud, mgr. (1917); 1,500 met.; no gen.; pur. 14 million kwh; rev. $547,000.

MARYLAND

BERLIN, Town of, 10 Williams St., 21811, 301/641-2770, John H. Burbage, mayor, (1919); 1,100 met.; gen. 3,592 kw, 6.2 million kwh; pur. 20.1 million kwh; rev. $1,406,286.

CENTREVILLE Electric Dept., 412 N. Commerce St., 21617, Eldred L. Browne, mgr.; no gen.

EASTON Utilities Commission, 11 S. Harrison St., 21601, 301/822-6110, William H. Corkran, Jr., gen. mgr. (1915); 5,363 met ; gen. 47,210 kw eng., 100.7 million kwh; pur. 11.9 million kwh; rev. $6,022,630.

HAGERSTOWN Mun. Electric Light Plant, 600 S. Cannon Ave., Box 1498, 21740, 301/790-2600, James E. Young, mgr. (1901); 17,500 met.; gen. 32,000 kw steam, 23.2 million kwh; pur. 187.1 million kwh; rev. $6,500,000.

ST. MICHAELS Utilities Commission, Box 176, 21663,

301/745-9400, Franklin R. Kilmon, mgr. (1916); 2,326 met.; no gen.; pur. 33.8 million kwh; rev. $1,977,607.

THURMONT Mun. Light, 10 Frederick Rd., 21788, 301/271-7313, Marion Wm. Rice, supt. pub. wks. (1910); 1,350 met.; no gen.; pur. 31.2 million kwh.

WILLIAMSPORT Electric Light Plant, 21795, W. M. Seymour, Jr., supt.; no gen.

MASSACHUSETTS

ASHBURNHAM Mun. Light Dept., 86 Central St., 01430, 617/827-4423, Robert W. Gould, mgr. (1908); 1,987 met.; no gen.; pur. 15.8 million kwh; rev. $800,308.

BELMONT Mun. Light Dept., 450 Concord Ave., Box 168, 02178, 617/484-2780, Joseph W. Mannix, mgr. (1898); 10,395 met.; no gen.; pur. 94.8 million kwh; rev. $4,653,032.

BOYLSTON, Town of, Mun. Light, Sanatorium Rd., 01505, 617/869-2626, Edward H. Kimball, mgr. (1912); 1,562 met.; no gen.; pur. 18.2 million kwh; rev. $768,233.

BRAINTREE Electric Light Dept., 44 Allen St., 02184, 617/848-1130, Donald H. Newton, mgr. (1892); 11,717 met.; gen. 32,627 kw, 38,000 kw steam, 5,000 kw eng., 73.1 million kwh; pur. 274.2 million kwh; rev. $13,705,321.

CHESTER Mun. Light Dept., Box 307, 01011, 413/354-7707, Ralph A. Philbrook, Jr., mgr.; 503 met.; no gen.; pur. 7.1 million kwh; rev. $297,618.

CHICOPEE Mun. Lighting Plant, 725 Front St. 01013, 413/598-8311, Herve L. Plasse, mgr. (1894); 20,667 met.; gen. 7,500 kw eng.; 113,040 kwh; pur. 292.5 million kwh; rev. $12,236,485.

CONCORD Mun. Light Plant, 133 Keyes Rd., 01742, 617/369-2500, Paul J. Flynn, supt.; 5,918 met.; no gen.; pur. 97.5 million kwh; rev. $5,235,309.

DANVERS Electric Dept., 2 Burroughs St., 01923, 617/775-0005, John Finocchio, supt. (1889); 8,843 met.; no gen.; pur. 210.9 million kwh; rev. $8,068,002.

GEORGETOWN Mun. Light Dept., Moulton and W. Main Sts., 01833, 617/352-8611, James E. Hazen, mgr. (1912); 1,991 met.; no gen.; pur. 21.7 million kwh; rev. $995,570.

GROTON Electric Light Dept., Station Ave., 01450, 617/448-6655, Roger H. Beeltje, mgr. (1909); 2,551 met.; no gen.; pur. 22.6 million kwh; rev. $1,367,422.

GROVELAND Mun. Light Dept., 23 School St., 01834, 617/372-1671, Howard R. Hill, mgr.; 1,649 met.; no gen.; pur. 16.7 million kwh; rev. $794,443.

HINGHAM Light Dept., 19 Elm St., 02043, 617/749-0134, Clyde H. Curtis, mgr. (1894); 7,855 met.; no gen.; pur. 105.8 million kwh; rev. $4,503,189.

HOLDEN Mun. Light Dept., Reservoir St., 01520, 617/829-4719, Neil E. Murray, mgr. (1912); 5,480 met.; no gen.; pur. 71.1 million kwh; rev. $3,064,939.

HOLYOKE Gas & Electric Dept., 70 Suffolk St., 01040, 413/534-0221, George E. Leary, mgr. (1902); 17,740 met.; gen. 37,400 kw, 24,800 kw steam, 10,000 kw gas turbine, 2,600 kw hydro, 16.2 million kwh; pur. 204.3 million kwh; rev. $9,691,970.

HUDSON Light and Power Dept., 49 Forest Ave., 01749, 617/568-8736, Horst Huehmer, mgr. (1897); 7,620 met.; gen. 20,200 kw eng., 2.6 million kwh; pur. 118.7 million kwh; rev. $4,762,243.

HULL Mun. Lighting Plant, 15 Electric Ave., 02045, 617/925-1220, Everett W. Lutzy, mgr. (1894); 4,428 met.; no gen.; pur. 33.2 million kwh; rev. $1,774,300.

IPSWICH, Town of, Electric Dept., 222 High St., 01938, 617/356-4331, Robert O'Meara, mgr. (1904); 4,919 met.; gen. 9,195 kw eng., 1.3 million kwh; pur. 66.6 million kwh; rev. $3,238,121.

LITTLETON Elec. Light Dept., Whitcomb Ave., 01460, 617/486-3104, Curtis J. Lanciani, gen. mgr. (1912); 4,360 met.; $3,076,050. pur. 61.3 million kwh; rev. $3,076,050.

MANSFIELD Mun. Electric Dept., 50 West St., 02048, 617/339-7122, 399-7011, James F. Hall, dir. (1903); 4,406 met.; no gen.; pur. 145.6 million kwh; rev. $5,645,490.

MARBLEHEAD Mun. Light Dept., 80 Commercial St., Box 369, 01945, 617/631-0240, Richard L. Bailey, gen. mgr. (1894); 8,990 met.; gen. 6,600 kw eng., 808,945 kwh; pur. 78.6 million kwh; rev. $3,465,859.

MERRIMAC Elec. Dept., 2 School St., 01860, 617/346-8311, Raymond J. Bastarache, mgr. (1904); 1,635 met.; no gen.; pur. 13.7 million kwh; rev. $687,227.

MIDDLEBOROUGH Gas & Electric Dept., Town Hall, Nickerson Ave., 02346, 617/947-1371, Clifford G. Engstrom, mgr. (1893); 8,472 met.; no gen.; pur. 91.0 million kwh; rev. $3,869,053.

MIDDLETON Mun. Light. Dept., S. Main St., Box 68, 01949, 617/774-4313, Mark Kelly, mgr. (1914); 1,563 met.; no gen.; pur. 42.4 million kwh; rev. $1,862,427.

NORTH ATTLEBOROUGH Electric Dept., Box 790, 02761, 617/699-7541, Harold G. Payne, mgr. (1894); 8,450 met.; gen. 2,012 kw steam, 10 million kwh; pur. 93 million kwh; rev. $5,022,500.

NORWOOD Mun. Light Dept., 404 Central St., Box 40, 02062, 617/762-0115, John P. Mogan, mgr. (1907); 11,956 met.; no gen.; pur. 193.8 million kwh; rev. $9,519,547.

PAXTON Electric Light Dept., 578 Pleasant St., 01612, 617/756-9508, Harold L. Smith, mgr. (1913); 1,381 met.; no gen.; pur. 16.9 million kwh; rev. $780,997.

PEABODY Mun. Light Plant, 70 Endicott St., 01960, 617/531-5975, Bruce P. Patten, mgr. (1891); 18,035 met.; gen. 30,000 kw, 20,000 kw gas turbine, 10,000 kw eng., 6.6 million kwh; pur. 266.8 million kwh; rev. $12,438,000.

PRINCETON Mun. Light Dept., Box F, 01541, 617/464-2815, Richard F. Wheeler, mgr. (1913); 953 met.; no gen.; pur. 7.4 million kwh; rev. $396,863.

READING, Town of, Mun. Light Dept., 25 Haven St., 01867, 617/944-1340, Norbert D. Rhinerson, gen. mgr. (1894); 19,952 met.; no gen.; pur. 415 million kwh; rev. $19,640,580.

ROWLEY Mun. Lighting Plant, 47 Summer St., 01969, 617/948-3992, G. Robert Merry, mgr. (1910); 1,418 met.; no gen.; pur. 15 million kwh; rev. $758,316.

RUSSELL Mun. Light Dept., Shattuck Rd., 01071, 413/862-4400, Edward Miller, mgr., 353 met.; no gen.; pur. 3.5 million kwh; rev. $132,637.

SHREWSBURY Mun. Light Dept., 100 Maple Ave., 01545, 617/844-4881, James E. Baker, mgr. (1908); 9,090 met.; gen. 13,750 kw eng., 2.1 million kwh; pur. 150.4 million kwh; rev. $6,029,217.

SOUTH HADLEY, Town of, Electric Light Dept., 85 Main St., 01075, 413/536-1050, Wardman K. Brooksbank, mgr. (1914); 5,959 met.; no gen.; pur. 108.3 million kwh; rev. $4,223,715.

STERLING Mun. Elec. Light Plant, Main St., Box 302, 01564, 617/422-6662, Frederick N. Gurney, mgr. (1911); 1,926 met.; no gen.; pur. 24.2 million kwh; rev. $1,011,708.

TAUNTON Mun. Lighting Plant, 55 Weir St., Box 870, 02780, 617/824-5844, Joseph Blain, mgr. (1897); 22,150 met.; gen. 138,300 kw, 118,000 kw combined cycle steam, 20,000 combined cycle kw gas turbine, 287.8 million kwh; pur. 299.4 million kwh; rev. $24,417,276.

TEMPLETON Mun. Lighting Plant, 86 S. Main St., Baldwinville, Mass., 01436, 617/939-5323, Gerald P. Skelton, mgr. (1906); 2,409 met.; no gen.; pur. 42 million kwh; rev. $1,511,850.

WAKEFIELD Mun. Light Dept., 9 Albion St., 01880, Drawer 190, 617/245-0027, William J. Wallace, mgr. (1894); 9,600 met.; no gen.; pur. 114.8 million kwh; rev. $5,841,400.

WELLESLEY Dept. of Public Works, Electric Div., 455 Worcester St., Box 364, Wellesley Hills, 02181, 617/235-7600, Maurice R. Berdan, dir. pub. wks. (1892); 8,720 met.; no gen.; pur. 153.7 million kwh; rev. $8,091,128.

WEST BOYLSTON Mun. Lighting Plant, 4 Crescent St., 01583, 617/835-3681, Charles H. Coughlin, mgr. (1910); 2,898 met.; no gen.; pur. 45 million kwh; rev. $1,882,136.

WESTFIELD Gas & Electric Light Dept., 100 Elm St., 01085, 413/562-5141, Donald W. Dupperault, mgr. (1922); 13,117 met.; no gen.; pur. 241.8 million kwh; rev. $9,460,245.

MICHIGAN

BARAGA Mun. Water & Light Plant, 49908, J. H. Ross, supt.; no gen.; pur. 3 million kwh.

BAY CITY Electric Light & Power, 900 S. Water, 48706, 517/893-7511, Richard G. Harris, dir., elec. utils; 13,148 met.; no gen.; pur. 162.6 million kwh; rev. $8,078,272.

CHARLEVOIX Mun. Utilities, City Hall, 210 State St., 49720, 616/547-2510, James Brinker, city mgr.; 2,500 met.; gen. 325 kw hydro, 1.7 million kwh; pur. 22 million kwh; rev. $520,000.

CHELSEA Electric & Water Dept., 104 E. Middle St., 48118, 313/475-1771, Harold Bable, supt.; 1,415 met.; no gen.; pur. 17.6 million kwh; rev. $417,206.

CLINTON Bd. of Public Works, 119 E. Michigan Ave., 49236, 517/456-4207, Richard W. Sharpe, supt. public works; 800 met.; gen. 2,310 kw eng., 10.4 million kwh; pur. 1.9 million kwh; rev. $288,000.

COLDWATER Bd. of Public Utilities, 28 W. Chicago St., 49036, 517/279-9531, James R. Endicott, dir. (1891); 5,136 met.; gen. 25,375 kw, 11,125 kw steam, 14,250 kw eng., 55.6 million kwh; pur. 63.4 million kwh; rev. $6,304,714.

CROSWELL Light & Power Dept., 120 E. Sanborn Ave., 48422,

313/679-2120-2121, Parry G. Baer, mgr. (1897); 980 met.; no gen.; pur. 24 million kwh; rev. $1,014,433.

CRYSTAL FALLS Electrical Dept., City Hall, 49920, 906/875-6650, Walter E. Hagglund, city mgr.; 1,300 met.; gen. 1,000 kw hydro; rev. $294,902.

DAGGETT Electric Dept., 49821, Francis Stodola, elec. engr.

DETROIT, City of, Public Lighting Dept., 7500 Joseph Campau Ave., 48211, 313/875-0972, James A. Williams, supt. (1893); 1,580 met.; gen. 204,000 kw, 174,000 kw steam, 30,000 kw gas turbine, 430,373 kwh; pur. 249,314 kwh; rev. $13,742,503.

DOWAGIAC Dept. of Pub. Services, 203 Chestnut St., 49047, 616/782-8200, Larry J. Rohacs, dir. (1936); 2,295 met.; gen. 3,850 kw, 116,000 kwh; pur. 43.3 million kwh; rev. $1,687,639.

EATON RAPIDS, City of, 206 S. Main St., 48827, 517/663-8118, Dennis G. Craun, city clerk-treas. (1898); 1,800 met.; no gen.; pur. 26.8 million kwh; rev. $1.1 million.

ESCANABA Mun. Electric Utility, 120 N. Eighth St., 49829, 906/786-0061, Edwin A. Korpi, supt. (1894); 7,575 met.; gen. 25,000 kw steam; pur. 96.1 million kwh; rev. $4,072,061.

GLADSTONE Electric Dept., 1100 Delta Ave., 49837, 906/428-1633, Lawrence M. Young, supt. (1955); 2,800 met.; gen. 19.2 million kwh; pur. 1.8 million kwh; rev. $935,000.

GRAND HAVEN Bd. of Light & Power, 650 Harbor Ave., 49417, 616/846-6250, Roland Harry Dawson, gen. mgr. (1896); 8,447 met.; gen. 42,400 kw, 20,000 kw steam, 22,400 kw eng., 149.3 million kwh; pur. 10.7 million kwh; rev. $7,807,755.

HARBOR SPRINGS, City of, 349 Main St., 49740, 616/526-2122, Douglas V. Porter, supt. elec. dept., (1898); 2,054 met.; no gen.; pur. 18 million kwh; rev. $781,283.

HART Hydro Electric, 407 State St., 49420, 616/873-2434, Vern Lambrix, supt. (1927); 1,600 met.; gen. 3,900 kw, 3,600 kw eng., 300 kw hydro, 7.3 million kwh; pur. 8.5 million kwh; rev. $461,584.

HILLSDALE Bd. of Public Util., City Hall, 49242, 517/437-7678, William E. Lape, adm. asst., special projects, (1893); 4,762 met.; gen. 15,600 kw eng., 52.6 million kwh; pur. 33.9 million kwh; rev. $2,411,895.

HOLLAND Bd. of Public Works, 268 River Ave., 49423, 616/396-4628, Tim Morawski, gen. mgr. (1895); 13,700 met.; gen. 97,250 kw, 77,250 kw steam, 20,000 kw gas turbine, 293.5 million kwh; pur. 11.4 million kwh; rev. $12,235,462.

L'ANSE, Village of, Village Office, 101 Main St., 49946, 906/524-6116, Bruce G. Carlson, supt. (1908); 1,400 met.; no gen.; pur. 10.2 million kwh; rev. $448,600.

LANSING Bd. of Water & Light, 123 W. Ottawa St., Box 13007, 48901, 517/487-1885, Earl F. Brush, dir. and gen. mgr.; (1885); 75,854 met.; gen. 628,000 kw steam, 2,332.8 million kwh; pur. 1 million kwh; rev. $88,152,834.

LOWELL Mun. Light & Power Plant, 127 N. Broadway, 49331, 616/897-7552, John T. Jones, supt.; 1,600 met.; gen. 5,566 kw, 4,936 kw eng., 630 kw hydro, 8.1 million kwh; pur. 7 million kwh; rev. $300,613.

MARQUETTE Board of Light & Power, 2200 Wright St., 49855, 906/228-6900, Wilbert W. Wiitala, dir. (1890); 13,200 met.; gen. 78,700 kw, 36,650 kw steam, 23,100 kw gas turbine, 15,000 kw eng., 3,950 kw hydro, 180 million kwh; pur. 31 million kwh; rev. $11,342,000.

MARSHALL City Water & Electric Works, 109 E. Michigan Ave., 49068, 616/781-3968, Richard C. Ashdown, admr., (1892); 3,749 met.; gen. 13,080 kw, 12,761 kw eng., 319 kw hydro, 22.4 million kwh; pur. 34.7 million kwh; rev. $3,164,273.

NEGAUNEE Mun. Utilities, City Hall, 49866, 906/475-7220, Ronald Cardone, city mgr.; 2,300 met.; no gen.; pur. 20.2 million kwh; rev. $767,633.

NEWBERRY Water & Light Plant, 307 E. McMillan, 49868, 906/293-8531, Keith Sleeper, supt.; 1,000 met.; gen. 1,500 kw eng., 17.3 million kwh; rev. $756,199.

NILES Bd. of Public Works, 602 E. Main St., 49120, 616/683-4700, S. A. Brett, mgr. (1894); 6,582 met.; gen. 460 kw hydro, 2.5 million kwh; pur. 99 million kwh; rev. $3,826,133.

NORWAY City Light Dept., 915 City Hall, Box 194, 49870, 906/563-9641, J. E. Stanchina, supt. (1904); 1,853 met.; gen. 3,500 kw hydro, 23.6 million kwh; pur. 283,900 kwh; rev. $321,864.

PAW PAW, Village of, 115 E. Berrien St., 49079, 616/657-3169, Harry L. Bush, supt. of pub. works, (1898); 1,633 met.; no gen.; pur. 768,531 kwh; rev. $1,143,556.

PETOSKEY, City of, 200 Division St., 49770, 616/347-5147, Steven Hoffner, city mgr.; 3,049 met.; pur. 57.3 million kwh; rev. $2,302,139.

PORTLAND Mun. Utilities, 723 E. Grand River, 48875, 517/647-6912, Nyle Blaschka, supt.; (1896); 1,746 met.; gen. 1,538 kw, 1,163 kw eng., 375 kw hydro; 1.2 million kwh; pur. 18.6 million kwh; rev. $855,635.

ST. LOUIS Mun. Electric Light & Water, 412 N. Mill St., 48880, 517/681-3351 Augustin Dupont, city mgr.; 1,400 met.; gen. 3,875 kw, 3,515 kw eng., 360 kw hydro.

SEBEWAING Light & Water Dept., 110 W. Main, 48759, 517/883-2700, Arthur G. Reinhold, supt.; 900 met.; gen. 3,850 kw eng.; rev. $490,000.

SOUTH HAVEN Bd. of Public Utils., 539 Phoenix St., Box 507, 49090, 616/637-5211, Paul I. Preston, Jr., city mgr. (1902); 5,875 met.; no gen.; pur. 102.3 million kwh; rev. $3,770,918.

STEPHENSON Electric Light Dept., 49887, 906/753-2259, Stanley Saltz, supt. (1920); 425 met.; no gen.; pur. 4.9 million kwh; rev. $182,670.

STURGIS, City of, Elec. Dept., Box 280, 49091, 616/651-2321, John E. Brand, city mgr. (1911); 5,409 met.; gen. 6,230 kw, 5,350 kw eng., 880 kw hydro, 7.2 million kwh; pur. 122 million kwh; rev. $4,746,108.

TRAVERSE CITY Light & Power Dept., 400 Boardman Ave., Governmental Center 49684, 616/941-2309, William F. Strom, exec. dir. (1912); 6,620 met.; gen. 35,650 kw, 35,000 kw steam, 650 kw hydro, 131.8 million kwh; pur. 9.9 million kwh; rev. $6,494,265.

UNION CITY Electric Dept., 215 W. High St., 49094, 517/741-8591, James E. Spencer, supt.; 1,000 met.; gen. 1,500 kw eng.; pur. 10.4 million kwh.; rev. $612,049.

WAKEFIELD Light & Power Dept., 1211 Hancock St., 49968, 906/224-7041, Michael Smolcich, supt. (1913); 1,027 met.; no gen.; pur. 9.2 million kwh; rev. $193,800.

WYANDOTTE Dept. of Mun. Service, 140 Elm St., 48192, 313/282-7100, Dale O. Simmons. gen. mgr. (1889); 14,070 met.; gen. 55,000 kw comb. cycle, 138.5 million kwh; rev. $9,980,078.

ZEELAND Bd. of Public Works, City Hall, Elm and Cherry Sts., 49464, 616/772-6212, Martin J. Hieftje, util. mgr. (1935); 2,205 met.; gen. 18,386 kw eng., 76.4 million kwh; pur. 1.2 million kwh; rev. $1,726,457.

MINNESOTA

ADA Water & Light Dept., 10 Fifth Ave., 56510, 218/784-2211, P. Donovan, dir., public works; 972 met.; no gen.; pur. 9.5 million kwh; rev. $211,000.

ADRIAN Pub. Util. Comm., Box 187, 56110, 507/483-2849, Leo J. Hensen, supt.; 661 met.; gen. 1,440 kw eng., 41,700 kwh; pur. 6.8 million kwh; rev. $184,000.

AITKIN Public Util. Comm., 120 First St., N.W., 56431, 218/927-3222, Wilfrid Fossum, mgr. (1892); 1,500 met.; gen. 2,400 kw eng.; 307,000 kwh; pur. 23.2 million kwh; rev. $992,349.

ALEXANDRIA Bd. of Public Works, 316 Fillmore St., 56308, 612/763-6501, Earl LaMaack, gen. mgr. (1909); 5,600 met.; gen. 9,245 kw eng., 66,680 kwh; pur. 115.9 million kwh; rev. $2,930,250.

ALPHA Electric Dept., Box 97, 56111, 507/847-3557, Leonard G. Tauer, supt. (1915); 147 met.; no gen.; pur. 1.5 million kwh; rev. $69,612.

ALVARADO Mun. Electric Dept., 56710, 218/965-4827, Herb Monk, supt.; 187 met.; rev. $42,000.

ANOKA Water & Light Dept., 2015 First Ave. N., 55303, 612/421-6630, Lewis Bradford, dir. (1909); 7,389 met.; no gen.; pur. 132.5 million kwh; rev. $4,984,170.

ARLINGTON Elec. & Water Dept., 312 W. Alden St., 55307, 612/964-2378, Charles N. Berberick, supt.; 770 met.; no gen.; pur. 11 million kwh; rev. $262,000.

AUSTIN Utilities, 500 Fourth Ave., N.E., 55912, 507/433-8886, Norman E. Dietrich, gen. mgr. (1900); 10,782 met.; gen. 69,000 kw, 64,000 kw steam, 5,000 kw gas turbine, 143.3 million kwh; pur. 40 million kwh; rev. $8,100,941.

BAGLEY Public Utilities Comm., 117 N. Main Ave., Box M, 56621, 218/694-2300, Bernie Stavig, supt. (1912); 740 met.; no gen.; pur. 8.6 million kwh; rev. $231,000.

BARNESVILLE Mun. Light & Power, Box 295, 56514, 218/354-2292, H. Gilbertson, supt.; 740 met.; gen. 1,500 kw eng.; pur. 8.1 million kwh; rev. $198,000.

BAUDETTE Light & Water Dept., Box 548, 56623, 218/634-2432, Reynold A. Pederson, supt.; 633 met.; gen. 1,936 kw eng., 168,070 kwh; pur. 7.2 million kwh.

BENSON Mun. Light and Water Dept., 1411 Pacific Ave., 56215, 612/842-4981, Daniel G. Gauthun, supt.; 1,631 met.; gen. 4,500 kw, 3,900 kw eng., 600 kw steam, 10,830 kwh; pur. 20.1 million kwh; rev. $485,000.

BIGELOW Electric Dept., 56117, 507/683-2682, Ted Reitsma, supt.; 239 met.; no gen.; pur. 1 million kwh; rev. $35,000.

BIWABIK Water, Light, Power & Bldg. Comm., Box A, 55708, 218/865-6740, Jeffrey M. Jansen, supt. (1904); 684 met.; no gen.; pur. 6.7 million kwh; rev. $210,000.

BLOOMING PRAIRIE Public Utilities, Box 55, 55917, 507/583-6683, George Curtin, actg. supt.; (1931); 805 met.; gen. 2,390 kw eng., 602,250 kwh; pur. 8.8 million kwh; rev. $244,000.

BLUE EARTH Light & Water Dept., 118 E. Sixth St., 56013, 507/526-2191, Charles B. Dalby,

gen. mgr. (1908); 2,000 met.; gen. 9,000 kw, 4,000 kw steam, 5,000 kw eng., 12.3 million kwh; pur. 21.2 million kwh; rev. $1,567,518.

BRAINERD Light & Water Dept., City Hall, 501 Laurel St., Box 373, 56401, 218/829-8726, Elmer M. Lalli, supt. (1908); 5,700 met.; no gen.; pur. 93 million kwh; rev. $2,163,000.

BRECKENRIDGE Pub. Util., 205 N. Fifth St., Box 410, 56520, 218/643-4681, Joe Adrian, pub. wks. dir., (1907); 1,615 met.; no gen.; pur. 27.5 million kwh; rev. $744,000.

BREWSTER Electric Light & Power Plant, 56119, 507/842-5963, Kenneth Kluver, supt.; 300 met.; no gen.; pur. 2.4 million kwh.

BROWNTON Mun. Electric Light Dept., City Hall, 55312, 612/328-5318, Mrs. Martin Winterfeldt, city clerk; 530 met.; no gen.; pur. 3 million kwh; rev. $72,000.

BUFFALO Mun. Service, 212 Central Ave., 55313, 612/682-1181, Gerald Moe, supt. (1921); 2,160 met.; no gen.; pur. 29 million kwh; rev. $1,044,560.

BUHL Public Utilities Dept., City Hall, 55713, 218/258-3226, Mike Miklovich, supt.; 545 met.; gen. 1,975 kw, 1,300 kw steam, 675 kw eng., 1.3 million kwh; pur. 1.9 million kwh; rev. $138,000.

CALEDONIA Mun. Light & Water Dept., 231 E. Main St., 55921, 507/724-3450, R. Schmitz, supt. (1903); 1,027 met.; no gen.; pur. 10.6 million kwh; rev. $232,000.

CEYLON Water & Light Dept., 56121, 507/632-4535, Gerald Clark, city clerk; 327 met.; no gen; rev. $59,000.

CHASKA Pub. Util., 101 E. Fourth St., 55318, 612/448-2425, Jim Main, city mgr.; (1921); 2,396 met.; no gen.; pur. 42.3 million kwh; rev. $1,217,000.

DELANO Mun. Utilities, 11 W. Bridge Ave., 55328, 612/972-3211, John F. Schultz, supt. (1932); 1,042 met.; gen. 4,781 kw eng., 1.3 million kwh; pur. 12.6 million kwh; rev. $512,956.

DETROIT LAKES Public Utilities Dept., 1025 Roosevelt Ave., Box 647, 56501, 218/847-7609, Paul Hobensack, supt. (1912); 4,835 met.; gen. 16,000 kw, 10,000 kw gas turbine, 6,000 kw steam, 15.6 million kwh; pur. 782.6 million kwh; rev. $2,200,307.

EAST GRAND FORKS Water & Light Dept., 121 S. Fourth St., Box 322, 56721, 218/773-1163, Jerry Neppel, elec. supervisor (1906); 2,950 met.; no gen.; pur. 38.3 million kwh; rev. $1,161,000.

EITZEN Power & Light, 55931, Stanton Pous, supt.; 61 met.; no gen.; rev. $25,116.

ELBOW LAKE Mun. Util., City Hall, 56531, 218/685-4978, Rollo Gunderson, supt. (1966); 661 met.; gen. 2,272 kw eng., 833,600 kwh; pur. 6.6 million kwh; rev. $222,000.

ELK RIVER Mun. Utilities, 322 King Ave., 55330, 612/441-2020, Edson C. Stansfield, utils. supt., (1945); 2,858 met.; gen. 9,100 kw eng., 14.6 million kwh; pur. 31.1 million kwh; rev. $2,064,403.

ELY Water & Light Dept., 209 E. Chapman St., 55731, 218/365-3225, Albin Mavetz, supt.; 2,003 met.; no gen.; pur. 28.2 million kwh; rev. $721,000.

FAIRFAX Mun. Utilities, 206 S. First St., 55332, 507/426-7255, Russell N. Mortenson, supt.; 582 met.; gen. 2,000 kw eng., 256,800 kwh; pur. 6.6 million kwh; rev. $161,000.

FAIRMONT Public Utilities Comm., 117 E. First St., 56031, 507/235-6691, Kenneth DeVillers, mgr. (1909); 5,528 met.; gen. 36,000 kw, 24,000 kw steam, 12,000 kw eng., 116.1 million kwh; pur. 14.3 million kwh; rev. $5,514,897.

FOSSTON Mun. Light & Power, 220 E. First St., 56542, 218/435-1737, Russell W. Earls, supt. public wks. (1941); 709 met.; gen. 954 kw eng., pur. 16.1 million kwh; rev. $380,310.

GILBERT Water & Light Dept., City Hall, 55741, 218/741-9443, Robert A. Kivela, city clerk; 834 met; no gen.; pur. 7.8 million kwh; rev. $277,000.

GLENCOE Mun. Electric Plant, 305 11th St. East, 55336, 612/864-5184, Loren I. Reid, supt. (1938); 1,959 met.; gen. 21,156 kw eng., 11.4 million kwh; pur. 33 million kwh; rev. $1,646,643.

GRAND MARAIS Public Util. Comm., Box 83, 55604, 218/387-1848, Glenn R. Bergstrom, mgr. (1949); 859 met.; gen. 4,034 kw eng., 2.3 million kwh; pur. 8.7 million kwh; rev. $379,287.

GRAND RAPIDS Public Utilities, City Hall, Pogema Ave. and Fifth St., 55744, 218/326-3493, Roger Roy, supt. (1910); 4,150 met.; no gen.; pur. 69.4 million kwh; rev. $1,700,000.

GRANITE FALLS Mun. Power, 885 Prentice, 56241, 612/564-4430, Richard A. Voller, city mgr. (1890); 1,500 met.; gen. 500 kw hydro, 2 million kwh; pur. 19 million kwh; rev. $800,000.

GROVE CITY Electric Dept., City Hall, Box 84, 56243, 612/587-3351, Lois Turgeon, city clerk; 307 met.; no gen; rev. $90,000.

HALSTAD Mun. Utilities, 56548, 218/456-2128, Daniel R. Duklet, supt. (1939); 250 met.; gen. 1,020 kw eng., 5,985 kwh; pur. 4.1 million kwh; rev. $97,000.

HARMONY Water & Light, 55939, 507/886-8122. George D. Michel, supt.; 456 met.; no gen; rev. $128,000.

HAWLEY Public Utilities Comm., 319 Sixth St., Box 277, 56549, 218/483-3331, Merle Schenck, supt. (1910); 1,500 met.; gen. 1,460 kw eng., 1,500 kwh; pur. 9.9 million kwh; rev. $258,000.

HENNING Power & Light, Box 55, 56551, 218/583-2402, Eldor Hagen, supt., (1956); 575 met.; no gen.; pur. 5.9 million kwh; rev. $149,472.

HIBBING Public Utilities Comm., Nineteenth St. and Sixth Ave., 55746, 218/263-7515, Joseph A. Vumbaco, gen. mgr. (1898); 8,050 met.; gen. 19,500 kw steam, 80.6 million kwh; pur. 42.4 million kwh; rev. $5,245,000.

HUTCHINSON Utilities Commission, 225 Michigan St., 55350, 612/587-4746, Rufus Alexander, gen. mgr. (1936); 4,324 met.; gen. 61,280 kw, 25,000 kw gas turbine, 15,000 kw comb. cycle, 21,280 kw eng.; 87.1 million kwh; pur. 53 million kwh; rev. $6,004,941.

JACKSON Mun. Power Plant, 504 Second St., 56143, 507/874-4410, William R. Holmes, supt. (1913); 1,625 met.; gen. 900 kw eng., pur. 30.6 million kwh; rev. $816,319.

JANESVILLE Mun. Utilities, 219 N. Main, 56048, 507/234-5112, Alan Junkers, plant supt. (1938); 852 met.; gen. 3,376 kw dual-fuel eng., 1.6 million kwh; pur. 5.3 million kwh;, rev. $369,039.

KANDIYOHI, Village of, 56251, 612/382-2722, William Schroeder, supt.; 153 met.; no gen.; pur. 2 million kwh; rev. $60,000.

KASOTA Electric Light Dept., 56050, 507/931-2395, J. Neubert, supt.; 236 met.; no gen.; pur. 1.9 million kwh; rev. $61,000.

KASSON Public Utilities, 12 First Ave., N.E., 55944, 507/634-4711, Keith Houston, supt.; 807 met.; no gen.; pur. 6.6 million kwh; rev. $224,000.

KEEWATIN Public Utilities Comm., City Hall, 55753, 218/778-6544, Matt Draskovich, supt.; 553 met.; no gen.; pur. 4.8 million kwh; rev. $176,000.

KENYON Mun. Utilities, 713 Second St., 55946, 507/789-4611, Lorry Wille, supt.; 1,092 met.; gen. 1,921 kw eng., 2 million kwh; pur. 6.7 million kwh; rev. $237,000.

LAKE CITY Bd. of Water & Light Comm., 205 West Center St., Box 388, 55041, 612/345-2012, James Biggar, supt. (1907); 2,308 met.; no gen.; pur. 51.5 million kwh; rev. $1,535,335.

LAKE CRYSTAL Pub. Util. Comm., Village Hall, 56055, 507/726-2530, Alden Sutherland, mgr.; 801 met.; gen. 4,195 kw eng., 7.8 million kwh; pur. 346,500 kwh; rev. $316,000.

LAKEFIELD Public Utilities, Box 868, 56150, 507/662-6363, Richard Thompson, plant supt., (1900); 829 met.; gen. 2,066 kw, 9,200 kwh; pur. 10.9 million kwh; rev. $266,981.

LAKE PARK Public Utilities, Box 235, 56554, 218/238-5532, George Mattson, supt.; 302 met.; no gen.; pur. 2.7 million kwh; rev. $76,000.

LANESBORO Public Util. Comm., 202 Parkway South, Box 333, 55949, 507/467-2320, Lloyd J. Schmidt, supt. (1917); 615 met.; gen. 2,102 kw, 1,790 kw eng., 312 kw hydro, 337,290 kwh; pur. 3.6 million kwh; rev. $137,241.

LE SUEUR Mun. Utilities, 226 N. Main, 56058, 612/665-3323, Mervin Hentges, supt.; 1,678 met.; gen. 3,950 kw eng., 5 million kwh; pur. 32.2 million kwh; rev. $761,000.

LITCHFIELD Public Utilities Comm., 421 W. Third St., Box 521, 55355, 612/693-3277 Dallas E. Nelson, supt. (1889); 2,551 met.; gen. 11,000 kw, 3,000 kw steam, 8,000 eng., 839,340 kwh; pur. 71.2 million kwh; rev. $1,612,705.

LUVERNE Mun. Utilities, 609 E. Main St., Box 348, 56156, 507/283-2313, Craig Osvog, admin. (1892); 2,143 met.; gen. 7,422 kw, 3,000 kw steam, 4,422 kw eng., 163,760 kwh; pur. 44.4 million rev. $929,015.

MABEL, Village of, Box 425, 55954, 507/493-5299, Jimmy Narum, city clerk; (1905); 450 met.; no gen.; pur. 3.4 million kwh; rev. $80,000.

MADELIA Mun. Light & Power, 24 Abbott Ave., S.W., 56062, 507/642-8803, Steve Moses, supt. (1939); 985 met.; gen. 7,900 kw eng., 15.3 million kwh; pur. 3.4 million kwh; rev. $500,000.

MADISON Mun. Utilities, 109 Seventh Ave., 56256, 612/598-3239, Harold Hodge, supt.; 1,014 met.; gen. 2,840 kw, 1,800 kw steam, 1,040 kw eng.; pur. 13.4 million kwh; rev. $306,473.

MARSHALL Mun. Utilities, 113 S. Fourth St., Box 3575, 56258, 507/532-2213, F. Al Rome, gen. mgr. (1894); 5,040 met.; gen. 25,327 kw, 18,355 kw gas turbine, 3,972 kw eng., 3,000 kw steam, 75,600 kwh; pur. 144 million kwh; rev. $3,458,350.

MELROSE Mun. Utilities, 21 W. Main St., 56352, 612/256-4247, John J. Hinnenkamp, util. supt. (1905); 1,250 met.; gen. 8,111 kw eng., 513,000 kwh; pur. 34.7 million kwh; rev. $855,039.

MOORHEAD Public Service Dept., Box 779, 56560, 218/236-5200,

Thomas H. McCauley, supt. (1898); 11,000 met.; gen. 41,000 kw, 33,000 kw steam, 8,000 kw gas turbine, 123.8 million kwh; pur. 269.1 million kwh; rev. $9,374,788.

MOOSE LAKE Water & Light Comm., Box 418, 55767, 218/485-4100, Warren G. Weske, supt. (1932); 726 met.; gen. 4,100 kw eng., 5.9 million kwh; pur. 5.6 million kwh; rev. $509,969.

MORA Mun. Electric Utility, 16 N. Lake St., 55051, 612/679-1451, Virgil C. Anderson, supt. (1934); 1,601 met.; gen. 15,156 kw eng., 12.8 million kwh; pur. 33.9 million kwh; rev. $1,729,379.

MOUNTAIN IRON Light & Water Dept., Box 505, 55768, 218/735-8267, Raymond F. Anderson, supt. (1919); 580 met.; no gen.; pur. 5.7 million kwh; rev. $184,000.

MOUNTAIN LAKE Mun. Utilities, 925 Second Ave., 56159, 507/427-2633, Charles Utley, supt. (1935); 994 met.; gen. 5,442 kw eng., 15 million kwh; pur. none; rev. $494,000.

NASHWAUK Public Utilities Comm., 315 Third St., 55769, 218/885-2522, Louis E. Legueri, supt. (1910); 550 met.; no gen.; pur. 6 million kwh; rev. $181,000.

NEWFOLDEN Electric Dept., 56738, 218/874-5215, Martin Smeby, supt.; 72 met.; no gen; rev. $60,000.

NEW PRAGUE Mun. Utilities Comm., 300 E. Main St., 56071, 612/758-4447, Donald E. Meyer, supt. (1928); 1,199 met.; gen. 12,000 kw eng., 20.1 million kwh; pur. 27.4 million kwh; rev. $1,523,400.

NEW ULM Public Utilities Comm., 310 First St., N., Box 355, 56073, 507/354-4182, Harold M. Barck, supt. (1903); 5,444 met.; gen. 27,000 kw steam, 100.8 million kwh; pur. 10.3 million kwh; rev. $2,816,369.

NIELSVILLE Power & Light Dept., 56568, 218/946-2685, Darlene Ruthenberg, city clerk; 96 met.; no. gen; rev. $13,200.

NORTH BRANCH Water & Light Comm., Box 176, 55056, 612/674-7100, Richard C. Anderson, supt. (1941); 705 met.; gen. 2,565 kw eng., 2 million kwh; pur. 7 million kwh; rev. $375,428.

NORTH ST. PAUL, City of, 2526 E. 7th Ave., 55109, 612/770-4488, Ron Schuler, dir., elec. utils. (1900); 5,050 met.; no gen.; pur. 54.1 million kwh; rev. $2,239,212.

OLIVIA Mun. Utilities, 1009 W. Lincoln Ave., 56277, 612/523-2361, Leon O. Nemitz, supt.; 1,166 met.; no gen.; pur. 17.1 million kwh; rev. $287,100.

ORTONVILLE Light & Water Dept., 315 Madison Ave., 56378, 612/839-3428, Arthur Hamann, supt. of util.; 1,367 met.; no gen.; pur. 17.9 million kwh; rev. $465,000.

OWATONNA Public Utilities, 208 S. Walnut Ave., 55060, 507/451-2480, David M. Martin, gen. mgr. (1924); 8,000 met.; gen. 34,500 kw steam, 105.2 million kwh; pur. 30.1 million kwh; rev. $6,315,284.

PETERSON Elec. System, 55962, 507/875-5375, Vangie Grisvold, city clerk; 76 met.; no gen.; rev. $29,000.

PIERZ Mun. Utilities, Box 205, 56364, 612/468-2123, Al Boser, supt.; 358 met.; no gen; rev. $118,000.

PRESTON Public Utilities Comm., 55965, 507/765-4541, Fred Nagel, elec. supt., (1896); 747 met.; gen. 3,500 kw dual-fuel eng., 429,680 kwh; pur. 9.6 million kwh; rev. $468,585.

PRINCETON Public Utils. Comm., 907 1st St., 55371, 612/389-2252, Harold R. Steppuhn, supt. (1938); 1,423 met.; gen. 7,650 kw eng., 8,800 kwh; pur. 15.3 million kwh; rev. $1,084,282.

PROCTOR Public Utilities. Comm., 210 Third Ave., 55810, 218/624-4055, Douglas G. Nelson, plant supt. (1941); 1,300 met.; no gen.; pur. 13.9 million kwh; rev. $718,498.

RANDALL Mun. Util., City Hall, 56475, 612/749-2159, Quentin T. Schwanke, clerk; 242 met.; no gen.; pur. 2.2 million kwh; rev. $62,522.

REDWOOD FALLS Public Utilities Comm., 207 E. Fourth St., 56283, 507/637-5789, Curtis G. Weber, supt. (1946); 3,586 met.; gen. 9,630 kw, 9,130 kw eng., 500 kw hydro, 3.5 million kwh; pur. 45 million kwh; rev. $1,294,440.

ROCHESTER Public Utilities, 506 First Ave. N.E., Box 6057, 55901, 507/285-8943, John A. Cobb, gen. mgr. (1893); 25,197 met.; gen. 141,524 kw, 111,324 kw steam, 28,000 kw gas turbine, 2,000 kw hydro, 382.6 million kwh; pur. 129.1 million kwh; rev. $19,419,266.

ROSEAU Mun. Power Plant, 100 Second Ave., Box 307, 56751, 218/463-1542, Rudolph Kolberg, supt.; 1,011 met.; gen. 3,052 kw eng., 6.7 million kwh; pur. none; rev. $346,000.

ROUND LAKE Mun. Utility, 56167, 507/945-8127, Roger Jacobsen, supt.; 107 met.; no gen; rev. $85,000.

RUSHFORD Electric Dept., Village Hall, 55971, 507/864-2444, Gordon R. Hatleli, clerk; 597 met.; no gen.; pur. 6.2 million kwh; rev. $190,000.

RUSHMORE Electric Dept., 56168, 507/478-5221, Jurgen H. Engelkes, village clerk; 204 met.; no gen; rev. $36,000.

ST. CHARLES Light & Water Dept., 1413 Richland Ave., 55972, 507/932-3080, Gus Ihrke, supt.; 895 met.; no gen.; pur. 12.3 million kwh; rev. $372,443.

ST. JAMES Mun. Utilities, 120 Armstrong Blvd., S., 56081, 507/375-3121, ext. 22, Robert J. Banks, dir.; 1,875 met.; no gen.; pur. 30.1 million kwh; rev. $601,462.

ST. PETER Mun. Utils., 227 S. Front St., Box 299, 56082, 507/931-3540, James B. Sandeen, supt. (1893); 2,975 met.; no gen.; pur. 48.3 million kwh; rev. $1,556,980.

SARGEANT Electric Light Dept., 55973, 507/584-6896, Mrs. Herbert Martin, clerk; 52 met.; no gen; rev. $13,000.

SAUK CENTRE Water, Light & Power Comm., 523 Sinclair Lewis Ave., 56378, 612/352-2300, DeWayne Rubedor, supt. (1916); 1,600 met.; gen. 5,274 kw, 500 kw steam; 4,744 kw hydro; pur. 28 million kwh; rev. $673,201.

SHAKOPEE Public Utilities Comm., 1030 E. Fourth Ave., 55379, 612/445-1367, Louis Van Hout, util. mgr. (1900); 3,686 met.; no gen.; pur. 61.5 million kwh; rev. $2,184,107.

SHELLY Mun. Light Dept., 56581, 218/886-8355, Manfried Folstad, city clerk; 112 met.; no gen; rev. $34,000.

SLEEPY EYE Public Utilities, 130 Second Ave., N.W., 56085, 507/794-4371, D.H. Logue, supt. (1890); 1,811 met.; gen. 5,372 kw, 3,250 kw steam, 2,122 kw eng., 9.2 million kwh; pur. 16 million kwh; rev. $1,088,606.

SPRINGFIELD Mun. Utilities, 14 N. Marshall Ave., 56087, 507/723-5290, Menno Mennenga, supt. (1894); 1,103 met.; gen. 7,000 kw steam, 7.7 million kwh; pur. 8.7 million kwh, rev. $820,091.

SPRING GROVE Mun. Utility, 55974, 507/498-5221, Wesley Kjome, mgr.; 590 met.; no gen.; pur. 5.9 million kwh; rev. $180,000.

SPRING VALLEY Public Utilities, 104 South Section Ave., 55975, 507/346-7622, Robert G. Carson, interim supt. (1935); 1,362 gen. 8,376 kw eng., 4.5 million kwh; pur. 10.2 million kwh; rev. $815,100.

STAPLES Mun. Water & Light Dept., 211 Fifth St., N., 56479, 218/894-2441, N. G. Schroeder, clerk; 1,390 met.; no gen.; pur. 14.7 million kwh; rev. $483,000.

STEPHEN Electric Light Dept., City Hall, 56757, 218/478-3614, Wallace Rasmussen, supt.; 264 met.; no gen; rev. $116,000.

THIEF RIVER FALLS Light & Water Dept., Box 528, 56701, 218/681-5816, John T. Anderson, supt. (1901); 4,265 met.; gen. 5,800 kw, 5,300 kw eng., 500 kw hydro, 2.9 million kwh; pur. 82.9 million kwh; rev. $2,149,385.

TRUMAN Mun. Light Plant, 118 N. First Ave., Box 147, 56088, 507/776-6501, Erhardt F. Grefe, mgr. (1938); 600 met.; gen. 4,177 kw eng., 5.3 million kwh; pur. 3.1 million kwh; rev. $340,113.

TWO HARBORS Light & Water Dept., 610 Second Ave., 55616, 218/834-4547, John E. Turtle, city electrician, (1905); 1,704 met.; gen. 8,070 kw, 6,000 kw steam 2,070 kw eng.; rev. $800,000.

TYLER Mun. Light & Power Dept., Box 398, 56178, 507/247-3430, Edward L. Ericson, city admin.; 929 met.; gen. 1,154 kw eng., 8,390 kwh; pur. 3.9 million kwh; rev. $158,000.

VIRGINIA Dept. of Public Utilities, 620 Second St., S., Box 1048, 55792, 218/741-0740, Edward J. Kozan, supt. (1912); 6,900 met.; gen. 39,000 kw steam, 73.2 million kwh; pur. 2.9 million kwh; rev. $2,516,836.

WADENA Light & Water Dept., 104 N. Jefferson, 56482, 218/631-1813, Russell F. Berg, supt. (1897); 2,167 met.; no gen.; pur. 44.3 million kwh; rev. $1,240,534.

WARREN, City of, 126 W. Johnson Ave., 56762, 218/745-5343, Ralph H. Plencner, supt.; 950 met.; gen. 2,161 kw eng., 17,955 kwh; pur. 15.4 million kwh; rev. $495,781.

WARROAD Light & Power, City Hall, 56763, 218/386-1454, Harold O. Limb, city clerk,; 529 met.; no gen; rev. $221,000.

WASECA Water & Light Dept., 508 S. State St., 56093, 507/835-3890, Duane Brase, supt. (1894); 3,467 met.; no gen; pur. 44.1 million kwh; rev. $1,683,475.

WELLS Public Utilities, 101 First St., S.E., 56097, 507/553-3119, (1894); 1,[illegible] met.; gen. 8,406 kw eng., 10.3 million kwh; pur. 6.2 million kwh; rev. $663,041.

WESTBROOK Light & Power, 56183, 507/274-5522, Dennis Jutting, supt. (1938); 537 met.; gen. 1,505 kw eng., 52,600 kwh; pur. 5.2 million kwh; rev. $157,000.

WILLMAR Mun. Utilities Comm., 704 Litchfield Ave., S.W., Box 937, 56201, 612/235-4422, Ted C. Odenwald, gen. mgr. (1891); 6,831 met.; gen. 29,350 kw steam, 65.5 million kwh; pur. 64.5 million kwh; rev. $4,776,783.

WINDOM Water & Light, 1162-2nd Ave., 56101, 507/831-3780, Dennis Purrington, elec. supt. (1915); 2,000 met.; gen. 3,630 kw, 3,130 kw gas turbine, 500 kw eng.; pur. 36 million kwh; rev. $1,000,000.

WINTHROP Mun. Electric Plant, 55396, 507/647-5308, Glen Berskow, supt.; 1,147 met.; no gen.; pur. 6.6 million kwh; rev. $251,000.

WORTHINGTON Mun. Utilities, City Hall, Box 111, 56187, 507/376-3161, LeRoy E. Schindler, mgr. (1896); 4,465 met.; gen. 15,000 kw steam, 26 million kwh; pur. 70.3 million kwh; rev. $3,564,474.

MISSISSIPPI

(Systems designated "TVA" are distributors of Tennessee Valley Authority power and purchase all of their power from TVA.)

ABERDEEN Electric Dept., Drawer J, 39730, 601/369-4724, Ralph T. Byars, mgr. (1939); 3,212 met.; pur. 105.9 million kwh; rev. $2,769,173. (TVA)

AMORY Electric & Water Dept., Box 266, 38821, 601/256-5633, Billie B. Wright, mgr. (1934); 3,428 met.; pur. 91.4 million kwh; rev. $2,541,471. (TVA)

CANTON Mun. Utilities, Box 114, 39046, 601/859-2921, John M. Wallace, gen. mgr. (1896); 4,579 met.; no gen.; pur. 75.8 million kwh; rev. $3,094,985.

CENTREVILLE, 39631. **(Town owns distribution system; leased to Mississippi Power & Light Co.)**

CLARKSDALE Water & Light Dept., Box 940, 38614, 601/627-4761, Lewis L. Wilkins, supt. (1900); 8,154 met.; gen. 63,000 kw, 25,000 kw steam, 12,500 kw gas turbine, 25,500 comb. cycle, 130 million kwh; pur. 3.7 million kwh; rev. $6,129,045.

COLLINS Mun. Light & Power Plant, 39428.

COLUMBUS Light & Water Dept., Box 949, 39701, 601/328-7192, Sam A. Head, Jr., gen. mgr. (1939); 11,133 met.; pur. 336.7 million kwh; rev. $10,934,230. (TVA)

DURANT Light & Water Plant, 101 E. Mulberry, Box 272, 39063, 601/653-3221, Billy J. Binegar, supt.; 1,162 met.; no gen.; pur. 14.8 million kwh; rev. $350,000.

FAYETTE Light & Water Plant, 36069. **(Leased to Mississippi Power & Light Co.)**

GREENWOOD Utilities, 101 Wright Place, Box 866, 38930, 601/453-7234, C. M. Mathews, mgr. (1904); 9,639 met.; gen. 64,900 kw, 53,650 kw steam, 11,250 kw gas turbine, 176.5 million kwh, pur. 13.1 million kwh; rev. $7,315,587.

HOLLY SPRINGS, City of, Electric Dept., Highway 4 East, 38635, 601/252-4411, David J. Turner, mgr. (1890); 7,900 met.; pur. 161.8 million kwh; rev. $5,082,779. (TVA)

ITTA BENA Water & Light Dept., 38941, Charles Mitchell, supt., 700 met.; no gen.

KOSCIUSKO Mun. Light & Water Plant, 204 West Jefferson St., 39090, 601/289-1141, Charles E. Burchfield, supt. (1919); 3,140 met.; no gen.; pur. 44.7 million kwh; rev. $1,903,000.

LELAND Mun. Light and Water Division, 101 Deer Creek Drive, N.W., Dale Martin, mgr., 38756; no gen.

LOUISVILLE Electric System, 39339, 601/773-5521, LeRoy L. Brown, supt. (1939); 3,105 met.; pur. 118.7 million kwh; rev. $3,028,725. (TVA)

MACON Electric Dept., Pulaski St., Box 146, 39341, 601/726-5251, H. L. Ledbetter, supt. (1927); 1,116 met.; pur. 21.4 million kwh; rev. $594,194. (TVA)

MENDENHALL Mun. Light Dept., 39114, H. L. Thompson, supt.

NEW ALBANY Water & Light Dept., 100 Cleveland St., Box 236, 38652, 601/534-5021, Harold G. Smith, mgr. (1934); 7,495 met.; pur. 162 million kwh; rev. $4,794,990. (TVA)

OKOLONA Electric Dept., Box 111, 38860, 601/447-5482, Frank Westbrook, operating supt. (1935); 3,772 met.; pur. 68.1 million kwh; rev. $1,889,509. (TVA)

OXFORD, City of, Electric Dept., Box 827, 38655, 601/236-1310, Tom H. Landrum, supt. (1896); 4,500 met.; pur. 106.1 million kwh; rev. $3,482,554. (TVA)

PHILADELPHIA Utilities, 525-1 E. Main St., Box 88, 39350, 601/656-1121, C.D. McNeese, mgr. (1939); 3,222 met.; pur. 85.9 million kwh; rev. $2,801,571. (TVA)

STARKVILLE Electric Dept., Box 927, 39759, 601/323-3133, Clay R. Campbell, gen. mgr. of adm. (1939); 1,088 met.; pur. 188.8 million kwh; rev. $5,772,878. (TVA)

TUPELO, City of, Electric Dept., Box 588, 38801, 601/842-1663, A. R. Aycock, mgr. (1900); 11,514 met.; pur. 396.1 million kwh; rev. $12,404,548. (TVA)

WATER VALLEY Electric Dept., 38965, 601/473-2770, Vernon Chambers, supt. (1938); 1,820 met.; pur. 48.7 million kwh; rev. $1,367,361. (TVA)

WEST POINT Electric System, 331 Washington St., 39773, 601/494-2262, Dewell Brasher, supt. (1940); 3,497 met.; pur. 108.2 million kwh; rev. $2,771,030. (TVA)

WOODVILLE Light, Water & Gas Plant, 39669. **(Leased to Mississippi Power & Light Co.)**

YAZOO CITY Public Service Comm., 125 W. Commercial St., Box 660, 39194, 601/746-3741, C. E. Lingenfelder, mgr. (1903); 5,400 met.; gen. 31,000 kw, 18,500 kw steam, 12,500 kw gas turbine, 77 million kwh; pur. 2 million kwh; rev. $2,000,000.

MISSOURI

ALBANY Light & Water Plant, 106 E. Clay, 64402, 816/726-3510, Robert Bridges, city admin.; no gen.

BETHANY Mun. Water & Light, Box 344, 64425, Samuel C. Davis, elect. supt.

BUTLER Mun. Light & Water Plant, 64730, 816/679-4182, Frank Fritts, supt.; 1,900 met.; gen 6,000 kw eng.

CABOOL Mun. Elec. Utility, 618 Main St., 65689, 417/962-3322, David Rust, mayor.

CALIFORNIA Mun. Utilities, 65018, 314/796-4591, Bill J. Gilbert, supt.; 1,385 met.; gen. 1,000 kw eng.

CAMERON Light & Water Dept., 223 E. Third St., 64429, Lawrence Kennedy, dir. of util.; 1,600 met.; gen. 1,800 kw eng.

CAMPBELL Mun. Light Dept., 202 W. Grand, 63933, J.P. Slankard, supt.

CARROLLTON Mun. Utilities, 201 W. Benton St., 64633, 816/542-0379, Lowell L. Anderson, supt. (1941); 2,483 met.; gen. 22,619 kw eng., 29.9 million kwh; pur. 18.8 million kwh; rev. $1,974,901.

CARTHAGE Water & Electric Plant, Box 611, 64836, 417/358-5904, Howard A. Berry, gen. supt. (1898); 5,826 met.; gen. 34,000 kw eng., 98.2 million kwh; pur. 17 million kwh; rev. $3,646,481.

CENTRALIA Power & Light Dept., City Hall, 114 S. Rollins, 65240, 314/682-2139, Howard Burton, city admin.; 1,600 met.; no gen.

CHILLICOTHE Mun. Utilities, 715 Washington St., Box 807, 64601, 816/646-1664, Keith D. Beardmore, gen. mgr. (1911); 4,633 met.; gen. 11,000 kw steam, 19.3 million kwh; pur. 62.2 million kwh; rev. $3,208,924.

CLARKSVILLE Bd. of Public Works, 63336, Kenneth D. Shufard, supt.; no gen.

COLUMBIA Water & Light Dept., Box N, 65205, 314/874-7325, Richard E. Malon, dir. (1904); 20,927 met.; gen. 10,100 kw, 8,850 kw steam, 1,250 kw gas turbine, 124,750 kwh; pur. 345,626 kwh; rev. $21,700,000.

CRANE, City of, 120 N. Commerce, 65633, 417/723-5990, Jack Swearingen, dir. pub. works, (1963); 625 met., no gen.; rev. $200,000.

CUBA Mun. Utilities, 65453, Paul D. Dickens, supt.

EL DORADO SPRINGS Bd. of Pub. Wks., 64744, 417/876-2145, LeRoy Hoskins, supt. (1939); 1,533 met.; no gen.; pur. 16.4 million kwh; rev. $300,973.

FARMINGTON City Light & Water, Long Memorial Bldg., 110 W. Columbia, 63640, 314/756-2620, Ed Knight, supt. (1900); 3,020 met.; no gen.; rev. $750,000.

FAYETTE Water & Light Dept., 117 S. Main St., 65248, 816/248-2214, Frank Mansfield, supt.; 1,200 met.; gen. 3,661 kw eng.

FREDERICKTOWN City Light & Power, 120 W. Main, 63645, 314/783-2154, Ronald W. Sheppard, mgr. (1948); 1,920 met.; no gen.; pur. 22.2 million kwh; rev. $690,713.

FULTON Lighting & Power System, Box 142, 65251, 314/642-6655, John E. Bates, gen. supt. (1895); 4,079 met.; gen. 32,450 kw, 18,000 kw gas turbine, 14,450 kw eng., 47.8 million kwh; pur. 39.9 million kwh; rev. $3,289,795.

GALLATIN Mun. Light & Water Works, 64640, 816/663-2011, Earl C. Binney, Mayor; 1,000 met.; gen. 1,800 kw eng., 350,000 kwh; pur. 14 million kwh; rev. $170,000.

GALT Mun. Light Plant, 64641, Arnold Werteen, supt.

GILMAN CITY Power & Light Plant, 64642, Earl Crump, supt.

HANNIBAL Bd. of Public Works, City Hall, 63401, 314/221-8050, Owen Ransdell, gen. supt. (1886); 8,304 met.; pur. 131.2 million kwh; rev. $4,903,844.

HARRISONVILLE Mun. Utilities, 64701, Jimmie Smith, supt.; 1,425 met.; no gen.

HERMANN Mun. Utilities, 312 Schiller St., 65041, 314/486-5953, Linford H. Thornton, supt. (1953); 1,754 met.; no gen.; pur. 28.8 million kwh; rev. $1,134,137.

HIGGINSVILLE Water & Light Dept., 1922 Main St., Box 110, 64037, 816/584-2106, Russell Ellis, supt. of utilities (1893); 2,055 met.; gen. 3,150 kw eng., 204,000 kwh; pur. 25 million kwh; rev. $825,000.

HOUSTON Electric Dept., 111 W. Main St., 65483, 417/967-3187, David E. Impey, mayor; 1,200 met.; no gen.; pur. 17 million kwh.

HUNNEWELL Electric Dept., Box 27, 63443, Jack W. Duer, supt. (1915); 125 met.; no gen.; rev. $10,638.

INDEPENDENCE City Power & Light, 21500 E. Truman Road, 64056, 816/796-4400, Parley Banks, elec. util. dir. (1901); 44,000 met.; gen. 271,000 kw, 108,000 kw steam,

163,000 kw gas turbine, 619.6 million kwh; pur. 22.7 million kwh; rev. $27,000,000.

JACKSON Mun. Utilities, 225 S. High St., 63755, 314/243-3568, Carl L. Talley, city administrator; 2,600 met.; gen. 5,800 kw eng.; pur. 36.5 million kwh; rev. $725,737.

KAHOKA Water & Light Dept., 255 N. Washington, 63445, William C. Bair, supt.; 1,000 met.; gen. 2,100 kw eng.

KENNETT Bd. of Public Works, 304 Franklin Ave., Box 40, 63857, 314/888-2835, Larry V. Jones, mgr. (1942); 4,638 met.; gen. 31,906 kw eng., 11 million kwh; pur. 82 million kwh; rev. $2,302,147.

KIRKWOOD, City of, Electric Dept., 212 S. Taylor Ave., 63122, 314/822-5847, Bob R. Carter, supt.; (1900) 10,000 met.; no gen.; pur. 133 million kwh; rev. $6,017,853.

LAMAR Light and Water Co., 1100 Broadway, 64759, 417/682-5554, J. A. Roberts, city supt. (1900); 2,107 met.; no gen.; pur. 32.7 million kwh; rev. $914,892.

LA PLATA Mun. Power and Light Plant, 63549, 816/332-7212, Gayle Perry, supt. (1938); 840 met.; gen. 1,800 kw eng., 409,175 kwh; pur. 5.7 million kwh.

LEBANON Light & Water Dept., 210 Van Buren St., Box 111, 65536, 417/532-2157, Bill Lawson, supt.; 3,600 met.; no gen.

LIBERAL Mun. Light & Water, 64762, Neil M. Mooney, supt.

LOCKWOOD Light & Water, Box O, 65682, 417/232-4221, Wayne Shorter, Jr., city supt.; 540 met.; no gen.; pur. 4.2 million kwh; rev. $86,446.

LOUISIANA Bd. of Pub. Wks.; City Hall, 121 N. Seventh St., 63353, 314/754-4091, Robert M. Stephens, supt.

MACON Mun. Utilities, 121-123 W. Bourke St., 63552, 816/385-3175, Paul E. Jensen, gen. supt. (1930); 2,883 met.; gen. 11,0[illegible] kw eng., 2 million kwh; pur. 50.3 [illegible]illion kwh; rev. $2,119,607.

MALDEN Bd. of Pu[illegible] Works, 111 E. Laclede, 63863 [illegible]76-2419, W. A. Green, adr[illegible] (1910); 2,600 met.; gen. 13,6[illegible]g., 4 million kwh; pur. 41 [illegible]; rev. $1,100,000.

MANSFIELD Mun. Utils., 65704, 417/924-3719, Kenneth Cowell, city supervisor (1963); 619 met.; no gen.; pur. 16.3 million kwh; rev. $375,555.

MARCELINE Mun. Utilities, 116 N. Kansas Ave., 64658, 816/376-3556, Lanny Holt, supt.; 1,300 met.; gen. 10,681 kw eng., 15.1 million kwh; pur. none; rev. $340,000.

MARSHALL Mun. Utilities, 74 E. Arrow St., 65340, 816/886-6966, Thomas F. Hill, gen. supt., (1920); 6,562 met.; gen. 42,000 kw, 26,500 steam, 15,500 kw gas turbine, 104.8 million kwh; pur. 30 million kwh; rev. $4,926,968.

MEMPHIS Mun. Light Plant, 135 S Main, 63555, 816/465-2003, Paul C. Luscombe, supt. (1919); 1,484 met.; gen. 6,476 kw eng., 1.6 million kwh; pur. 11.5 million kwh; rev. $539,226.

MILAN Mun. Light Plant, 3 Third St., 63556, Edward Sayre, supt.; 950 met.; no gen.

MINDENMINES Mun. Light Dept., 64769, 417/842-3216, Freddie Lee, supt.; 160 met.; no gen.

MOBERLY Mun Utilities, 109 N. Clark, 65270, Kenneth Brooks, supt.

MONETT, City of, Box 110, 65708, 417/235-3300, Harlan C. Barekman, supt. (1894); 3,095 met.; no gen.; pur. 70 million kwh; rev. $2,032,300.

MONROE CITY Utilities, 208 Catherine 63456, 314/735-2606, Thomas W. Burditt, dist. supt.; 985 met.; gen. 8,000 kw eng., 10.1 million kwh; pur. none; rev. $242,993

MOUNTAIN GROVE, City of, 10 E. State St., 65711, F. Bolt, Mayor.

MOUNT VERNON Mun. Light Plant, 65712, Benton Baker, supt.

NEW MADRID Mun. Light & Power, 560 Mott St., 63869, Don Lloyd, city adm.; 314/748-2458, 1,600 met.; gen. 4,800 kw eng., pur. 26 million kwh; rev. $793,657.

NIXA Mun. Elec. System, 65714, 417/725-3785, Jim Herrington, board chair. (1964).

ODESSA Mun. Utilities, 125 S. Second, 64076, Ron Delay, supt.; 1,250 met.; gen. 4,800 kw eng.; pur. 20 million kwh.

OSCEOLA City Mun. Utils., Box 321, 64776, 417/646-8421, Richard J. Reed, supt. (1971); 316 met.; no gen.; pur. 3.5 million kwh; rev. $134,486.

OWENSVILLE Mun. Utilities, 65066, Kenneth Holzschuh, supt.

PALMYRA Board of Public Works, City Hall, 301 S. Main, 63461, 314/769-2224, William D. Huffman, gen. supt. (1912); 1,500 met.; gen. 6,370 kw eng., 11.2 million kwh; pur. 10,200 kwh; rev. $316,594.

PARIS Utilities, 124 W. Caldwell St., 65275, 816/327-4334, Caskie L. Painter, Mayor; 800 met.; no gen.; pur. 10 million kwh.

PATTONSBURG Mun. Light Plant, 64670, Irvin Eberle, supt.

PERRY Public Utilities, 63462, 314/565-3131, Ernst E. Elliott, supt.; 400 met.; no gen.; pur. 1.7 million kwh; rev. $78,685.

PLEASANT HILL Mun. Utilities, Commercial and Lake Sts., 64080, 816/987-2245, Carl H. Rook, supt.; 1,350 met.; gen. 9,276 kw eng., 11.6 million kwh; pur. none; rev. $319,472.

POPLAR BLUFF Bd. of Public Works, 301 S. Main St., 63901, 314/785-5749, Cecil R. Johnson, mgr. (1916); 8,266 met.; gen. 14,000 kw eng., 1 million kwh; pur. 127.1 million kwh; rev. $2,235,918.

PRINCETON, City of, 64673, 816/748-4375, George Sparks, supt. (1889); 714 met.; gen. 1,425 kw eng., 671,500 kwh; pur. 5.9 million kwh.

RICH HILL Mun. Electric Plant, Seventh and Walnut Sts., 64779, 417/395-4211, Billy Gene Heckadon, supt. (1913); 925 met.; gen. 1,100 kw eng., 3,610 kwh; pur. 4.6 million kwh; rev. $107,057.

RICHLAND Mun. Utilities, Box 798, 65556, 314/765-3532, Thomas Forslund, admin. (1946); 935 met.; no gen.; pur. 9.4 million kwh; rev. $315,000.

ROCKPORT Bd. of Public Works, Main and Clay, 64482, 816/744-2676, E. R. Bunn, supt. (1932); 750 met.; gen. 5,894 kw eng., 10 million kwh; pur. 6 million kwh; rev. $250,000.

ROLLA Mun. Utilities, Box 767, 65401, 314/364-1572, James W. Banse, gen. mgr. (1945); 5,200 met.; no gen.; pur. 135.4 million kwh; rev. $4,750,000.

ST. CLAIR Utilities, 570 S. Main St., 63077, Lee J. Emmons, supt.

ST. JAMES Mun. Utilities, 105 N. Jefferson St., Box 426, 65559, 314/265-3282, Kenneth Young, acting supt.; 1,100 met.; no gen.; pur. 7.5 million kwh; rev. $172,309.

ST. ROBERT, City of, Waynesville, Mo., 65583, R. V. Nelson, supt.

SALEM Mun. Light & Power, West Third and Grand, City Hall, 65560, 314/729-4612, Clarence Inman, supt. (1907); 1,200 met.; no gen.; pur. 19 million; rev. $480,000.

SALISBURY Mun. Utilities, 128 W. Second St., 65281, 816/388-5225, Dick K. Windmiller, supt.; 1,100 met.; no gen.; pur. 10.4 million kwh; rev. $265,728.

SHELBINA Mun. Water & Light Dept., 63468, 314/588-4104, Darrell Purdy, supt.; 1,200 met.; gen. 875 kw eng.; pur. 6.5 million kwh; rev. $296,231.

SIKESTON Bd. of Mun. Utilities, 138 N. Prairie, 63801, 314/471-3328, E. R. Inman, util. dir. (1931); 7,472 met.; gen. 17,150 kw, 10,900 kw eng., 6,250 kw steam, 28.9 million kwh; pur. 144 million kwh; rev. $4,598,255.

SLATER Mun. Plant, 113 E. Front St., Box 247, 65349, 816/529-2271, Paul Beecher, mgr. (1888); 1,416 met.; no gen.; pur. 9.9 million kwh; rev. $249,517.

SPRINGFIELD City Utilities, 301 E. Central St., 65801, 417/831-8311, John L. McMahan, gen. mgr. (1945); 61,260 met.; gen. 462,000 kw, 447,000 kw steam, 15,000 kw gas turbine, 1,364.8 million kwh; pur. 168.3 million kwh; rev. $50,131,535.

STANBERRY Dept. of Light, Gas & Water, City Hall, 64489, 816/783-2720, Sam W. Hatheway, supt.; 700 met.; gen. 3,200 kw eng., 6.9 million kwh; pur. none; rev. $115,463.

STEELVILLE Mun. Utilities, 65565, 314/775-2815, Virgil L. Robinson city engr.; 780 met.; no gen.; pur. 6 million kwh; rev. $288,000.

SULLIVAN Mun. Utilities Plant, 305 N. Park St., 63080, F. W. Smith, mgr.

THAYER Electric Dept., Second and Market St., 65574, Ira Goans, supt.; no gen.

TRENTON Mun. Utilities, 115 E. Tenth St., 64683, 816/359-2281, Gary Whorton, supt. (1937); 3,214 met.; gen. 18,900 kw eng., 3.4 million kwh; pur. 56.3 million kwh; rev. $2,050,177.

UNIONVILLE Light & Water Dept., 1611 Grant St., Box 255, 63565, 816/947-2168, Arthur O. Gates, supt.; 1,370 met.; gen. 6,800 kw eng.; pur. 10.4 million.

VANDALIA Bd. of Public Utils., 202 E. Park St., 63382, 314/594-3302, Ray Callahan, supt. (1938); 1,550 met.; gen. 6,000 kw eng., 596,600 kwh; pur. 14.8 million kwh; rev. $703,880.

WAYNESVILLE Mun. Utilities, 201 North St., 65583, 314/774-5217, Tom Tinsley, supt. (1963); 1,400 met.; no gen.; pur. 20 million kwh; rev. $765,000.

WEST PLAINS Water & Electric Dept., 220 Pennsylvania Ave., 65775, 417/256-4242, Lowell B. Patterson, supt.; 3,500 met.; no gen.; pur. 37 million kwh; rev. $601,968.

NEBRASKA

ALLIANCE Mun. Elec. System, Drawer D, 69301, 308/762-5400, -4810, R. A. Placek, city mgr. (1916); 5,634 met.; gen. 7,500 kw steam, 13.1 million kwh; pur. 68.3 million kwh; rev. $3,057,416.

ALMA (System sold to Nebraska Public Power District in 1980.)

ANSLEY Mun. Light Plant, 68814, Richard Amsberry, supt.; 320 met.; gen. 2,160 kw eng.

ARAPAHOE Light & Water, Box 235, 68922 308/962-7445, Wesley F. Smith, util. supt.; 620 met.; no gen.; pur. 6.5 million kwh; rev. $321,362.

ARNOLD Light & Water Plant, Box 462, 69120, 308/848-2228, Hal B.

Smith, supt. (1937); 614 met.; gen. 1,120 kw eng.; pur. 4.3 million kwh; rev. $85,000.

AUBURN Bd. of Public Works, 1600 O St., 68305, 402/274-4981, Lambert K. Blecha, gen. mgr. (1939); 2,618 met.; gen. 8,800 kw eng., 4.2 million kwh; pur. 36.2 million kwh; rev. $1,295,727.

BARTLEY Electric Dept., Box 53, 69020, 308/692-3222, Melvin Meguire, mgr.; 200 met.; no gen.; pur. 1.3 million kwh.

BATTLE CREEK Mun. Light & Power Dept., Box 128, 68715, 402/675-2165, Gerald McKnight, supt.; 500 met.; no gen.; pur. 6.7 million kwh; rev. $107,058.

BAYARD Mun. Utilities, 69334, 308/586-1121, L. G. Sanchez, supt.; 620 met.; no gen.; pur. 10 million kwh.

BEATRICE Bd. of Public Works, 205 N. Fourth St., Box 279, 68310, 402/223-5211, James Bauer, gen. mgr. (1947); 6,217 met.; no gen.; rev. $3.5 million.

BEAVER CITY Light Plant, 68926, 308/268-2125, Farrel Bates, supt. (1914); 450 met.; gen. 2,000 kw eng., 565,000 kwh; pur. 3.1 million kwh; rev. $206,979.

BENKELMAN Mun. Water & Light Plant, 69021, Bill Seybold, plant supt.; 600 met.; gen. 1,300 kw eng.

BLAIR Dept. of Utilities, 218 S. 16th St., 68008, 402/426-4194, Ray Fisher, dir. pub. works (1916); 2,891 met.; gen. 13,800 kw eng.; 1.3 million kwh.; pur. 50.3 million kwh., rev. $1,919,837.

BLUE HILL Electric Plant, Box 277, 68930, 402/742-6531, Royal Roskilly, supt.; 350 met.; gen. 1,811 kw eng.; pur. 3.9 million kwh.

BRADSHAW Electric Dept., 68319, B. J. Bartels, supt.; no gen.

BRAINARD Electric Dept., 68626, Louis Riha, supt.; 260 met.; no gen.; pur. 1 million kwh.

BRIDGEPORT Dept. of Utilities, 69336, Charles E. Brandt, Jr., supt.; 761 met.; no gen.; pur. 3.3 million kwh.

BROKEN BOW Utilities, Box 567, 68822, 308/872-6884, Leo Bullard, mgr. (1946); 2,200 met.; gen. 8,718 kw eng., 6.1 million kwh; pur. 26.7 million kwh; rev. $1,028,606.

BURT COUNTY PUBLIC POWER DISTRICT, 613 N. 13th St., Box 209, Tekamah, 68061, 402/374-2631, Jesse A. Rogers, gen. mgr.; 3,768 met.; no gen.; pur. 78.2 million kwh; rev. $2,428,811.

BURWELL Mun. Utilities, 8th & H St., 68823, Jerry Hughes, supt. (1922); 850 met.; gen. 4,500 kw eng., 7.8 million kwh; pur. none.

BUTLER COUNTY RURAL PUBLIC POWER DISTRICT, Box 349, David City, 68632, 402/397-3081, Richard S. Polak, gen. mgr.; 3,407 met.; no gen.; pur. 49.6 million kwh; rev. $1,719,585.

CALLAWAY Mun. Light Dept., 68825, Larry Nelson, supt.; 350 met.; gen. 840 kw eng.

CAMBRIDGE Mun. Light, Water & Ice Works, 69022, Ken Fichtner, supt.; gen. 3,315 kw eng.

CAMPBELL Mun. Electric Dept., 68932, 402/778-2111, Greg L'Hevreux, supt. (1909); 450 met.; gen. 250 kw eng., 250 kwh; pur. 4 million kwh.

CEDAR-KNOX PUBLIC POWER DISTRICT, Box 397, Hartington, 68739, 402/254-6291, Harold M. Martindale, mgr.; 3,991 met.; no gen.; pur. 84.3 million kwh; rev. $2,408,153.

CENTRAL CITY Light Dept., 1614 Sixteenth St., 68826, 308/946-2771, Loyal Ruhl, supt. (1909); 1,575 met.; no gen.; pur. 17 million kwh; rev. $258,000.

CENTRAL NEBRASKA PUBLIC POWER & IRRIGATION DISTRICT (THE), Fourth and Lincoln, Box 356, Holdredge, 68949, 308/995-8601, Richard D. Dirmeyer, gen. mgr. (1933); gen. 154,000 kw, 100,000 kw steam, 54,000 kw hydro, 750.8 million kwh; pur. none; rev. $15,717,800. (Sells power output to Nebraska Public Power District.)

CHAPPELL Mun. Utilities, 757 Second St., 69129, 308/874-2401, Daniel Dean, supt. (1911); 735 met.; pur. 8.5 million kwh.; rev. $321,772.

CHESTER Light & Water Comm., 68327, 402/324-5755, (1920); 267 met.; no gen.; pur. 6.1 million kwh; rev. $47,000.

CHIMNEY ROCK PUBLIC POWER DISTRICT, Box 608, Bayard, 69334, 308/586-1824, Harry Pappas, mgr.; 1,864 met.; no gen.; pur. 35.2 million kwh; rev. $917,517.

CLARKSON Electric Dept., 68629, 402/892-3100, (1898); 500 met.; no gen.; pur. 6.8 million kwh; rev. $16,000.

CORNHUSKER PUBLIC POWER DISTRICT, Highway 81 N., Box 9, Columbus, 68601, 402/564-2821, Norman L. Hoge, gen. mgr.; 6,828 met.; no gen.; pur. 126.3 million kwh; rev. $3,976,372.

COZAD Light Plant, 208 W. Eighth St., Box 65, 69130, 308/784-2090, Lloyd Keller, supt. (1939); 1,850 met.; no gen.; pur. 47 million kwh; rev. $1,489,249.

CRETE Elec. & Water Dept., City Hall, 239 E. Thirteenth St., 68333, 402/826-4311, George G. Beyer, mgr. of utils. (1887); 2,304 met.; gen. 15,277 kw eng., 4.2 million kwh; pur. 37.8 million kwh; rev. $1.391,758.

CUMING COUNTY PUBLIC POWER DISTRICT, 500 S. Main St., Box 67, West Point, 68788, 402/372-2463, Thomas A. Thomas, mgr.; 2,667 met.; no gen.; pur. 78.9 million kwh; rev. $2,333,704.

CURTIS Light and Power, 310 Center Ave., Box 31, 69025, 308/367-4122, E. D. Kohler, supt. (1913); 680 met.; gen. 3,800 kw eng., 4.7 million kwh; pur. 7.6 million kwh; rev. $127,034.

CUSTER PUBLIC POWER DISTRICT, East Highway 2, Box 10, Broken Bow, 68822, 308/872-2451, John H. Evans, mgr.; 7,165 met.; no gen.; pur. 93.2 million kwh; rev. $3,210,349.

DAKOTA CITY Electric Dept., 68731, 402/987-3331, Don McKinney, supt. (1910); 520 met.; no gen.; pur. 4.5 million kwh; rev. $49,561.

DAVENPORT Water & Light, 68335, Charley E. DeVore, comm.; no gen.

DAVID CITY Light & Water, 402 Fifth St., 68632, 402/367-3135, Gene Grubaugh, supt. (1913); 1,070 met.; gen. 5,000 kw eng., 3.5 million kwh; pur. 15.9 million kwh.

DAWSON COUNTY PUBLIC POWER DISTRICT, 200 S. Washington St., Box 777, Lexington, 68850, 308/324-2386, Philip E. Darby, Jr., mgr. (1937); 13,412 met.; no gen.; pur. 212.7 million kwh; rev. $6,838,839.

DESHLER Mun. Utilities, 68340, 402/365-4260, R. G. Koerwitz, supt.; 500 met.; gen. 1,400 kw eng.; pur. 6.5 million kwh.

DE WITT Mun. Light & Power Plant, 68341, Charles McDougall, mgr.; 277 met.; gen. 210 kw eng.

DORCHESTER Light Plant, Box 287, 68343, 402/946-2281, Leroy A. Vyhnalek, supt.; 280 met.; no gen.; pur. 2.1 million kwh; rev $98,000.

DOUGLAS Mun. System, 68344, 402/938-3020, Glenn Kressly, supt.; 110 met.; no gen.; rev. $50,438.

DUNCAN Mun. Elec. Dept., 68634, Erwin Schacher, chair.; 85 met.; no gen.

EDGAR Light & Water Comm., 68935, Roger Downs, supt.; 370 met.; no gen.

ELK CREEK Light & Water Dept., 68348, 402/877-2105, A. J. Damm, mayor (1920); 109 met.; no gen.; pur. 1.6 million kwh; rev. $16,870.

ELKHORN RURAL PUBLIC POWER DISTRICT, Box 310, Battle Creek, 68715, 402/675-2195, Milton Smith, mgr.; 5,244 met.; no gen.; pur. 73 million kwh; rev. $2,477,486.

EMERSON Mun. Light & Power Plant, Box 336, 68733, 402/695-2554, Gil Frey and Al Moody, gen. maint. (1920); 408 met.; gen. 1,400 kw eng., 3.2 million kwh; pur. 1.5 million kwh; rev. $225,970.

ENDICOTT Electric Dept., 68350, Clyde Kellie, clerk; 66 met.; no gen.

FAIRBURY Light & Water 612 D St., 68352, 402/729-3030, Glen R. Beachler, supt. (1910); 3,500 met.; gen. 21,000 kw steam, 10.2 million kwh; pur. 42.2 million kwh; rev. $1,908,355.

FAIRMONT Mun. Light & Water Works, 68354, Russell Snodgrass, supt.; no gen.

FALLS CITY Water & Light Dept., 1820 Towle St., 68355, 402/245-2741, Ralph M. Clark, supt. (1890); 2,782 met.; gen. 16,116 kw eng., 21.5 million kwh; pur. 21.8 million kwh; rev. $1,876,240.

FILLEY Utilities, 68357, 402/662-3555, Harold Huls and David Norten, light commissioners; 65 met.; no gen.; pur. 744,000 kwh; rev. $12,000.

FRANKLIN Water & Light Comm., Box 232, 68939, Jerry Remaly, supt.; 650 met.; gen. 4,080 kw eng.

FRANKLIN COUNTY RURAL PUBLIC POWER DISTRICT, 101 Sixteenth Ave., Box 246, Franklin, 68939, 308/425-6217, Arnold Esplund, mgr.; 1,509 met.; no gen.; pur. 17.6 million kwh; rev. $659,048.

FREMONT Dept. of Utilities, 725 N. Park Ave., 68025, 402/721-2490, Forrest McGrew, gen. mgr. (1895); 11,924 met.; gen. 136,000 kw steam, 331.5 million kwh; pur. 32.1 million kwh; rev $14,718,000.

FRIEND Electric Light & Water Dept., 146 Maple St., 68359, 402/947-5251, Nick Kile, supt.; 650 met.; no gen.; pur. 3 million kwh.

GERING Light & Water Dept., 1450 Tenth St., 69341, 308/436-5096, Michael E. Solomon, city adm. (1934); 3,700 met.; no gen.; pur. 60.8 million kwh; rev. $1,459,423.

GILTNER Light & Water Dept., 68841, Tom Lambert, light comm.; no gen.

GOTHENBURG, City of, 409 Ninth St., 69138, 308/537-3668, M. A. Rishel, mayor; Stan Hite, elec. foreman (1955);1,500 met.; no gen.; pur. 32.7 million kwh; rev. $1,000,000.

GRAND ISLAND Electric Dept., Box 1968, 68801, 308/381-5487, Robert J. Olson, dir. util. (1905); 16,927 met.; gen. 119,300 kw, 104,500 kw steam, 14,800 kw gas turbine, 283.9 million kwh; pur. 62.6 million kwh; rev. $15,060,032.

GREENWOOD Elec. Dept., 68366, Steve McClatchey, supt.; 200 met.; no gen.; pur. 1.1 million kwh.

HAMPTON Electric Dept., Box 295, 68843, 402/725-3186, Harry E. Madsen, supt.; 235 met.; no gen.; pur. 3.3 million kwh; rev. $85,838.

All of these Bonds having been sold, this announcement appears as a matter of record only.

Interest is exempt, in the opinion of Bond Counsel, from Federal income taxes under existing laws, and from income taxes imposed by the State of Arizona and political subdivisions thereof.

New Issue / October 21, 1980

$100,000,000

Salt River Project Agricultural Improvement and Power District, Arizona

Salt River Project Electric System Revenue Bonds, 1980 Series B

Dated: October 1, 1980 / Due: January 1, as shown below

Principal and semi-annual interest (January 1, 1981, and each July 1 and January 1 thereafter) is payable at the principal offices of First National Bank of Arizona, Phoenix, Arizona, the Trustee, at Continental Illinois National Bank and Trust Company of Chicago, Chicago, Illinois, or Citibank, N.A., New York, New York. Coupon bonds in $5,000 denominations, registrable as to principal only, or fully registered bonds in any whole multiple of $5,000 may be exchanged at the principal office of the Trustee.

The 1980 Series B Bonds are subject to optional and mandatory redemption as provided in the Official Statement.

AMOUNTS, MATURITIES, COUPON RATES AND PRICES

$13,500,000 Serial Bonds

Amount	Due	Rate	Price
$400,000	1986	6½%	@ 100%
450,000	1987	6¾	@ 100
450,000	1988	7	@ 100
200,000	1989	7¼	@ 100
550,000	1990	7½	@ 100

Amount	Due	Rate	Price
$ 600,000	1991	7.70%	@ 100%
700,000	1992	7.85	@ 100
750,000	1993	8	@ 100
850,000	1994	8.20	@ 100
900,000	1995	8.40	@ 100
1,000,000	1996	8½	@ 100

Amount	Due	Rate	Price
$1,100,000	1997	8.60%	@ 100%
1,200,000	1998	8.70	@ 100
1,300,000	1999	8.80	@ 100
1,450,000	2000	8.90	@ 100
1,600,000	2001	9	@ 100

$23,350,000 8% Term Bonds Due January 1, 2010 @ 88⅜%

$63,150,000 9¼% Term Bonds Due January 1, 2020 @ 100 %

(Accrued interest to be added)

The 1980 Series B Bonds are being issued for the purpose of financing construction and equipment necessary to provide electric power and energy to the District's service area. Proceeds of the 1980 Series B Bonds will also be used to make a deposit in the Debt Reserve Account and to pay financing costs. The Revenue Bonds, which include the 1980 Series B Bonds, are payable from and secured by a pledge of and lien on all revenues and income derived by the District from the ownership and operation of the Electric System after the payment of Operating Expenses and payments required to be made under the Prior Lien Bond Resolutions. The 1980 Series B Bonds shall not constitute general obligations of the District or obligations of the State of Arizona.

The 1980 Series B Bonds are offered when, as and if issued and accepted by the Underwriters, and subject to the approval of legality by Messrs. Mudge Rose Guthrie & Alexander, New York, New York, Bond Counsel. Certain legal matters will be passed upon for the Underwriters by Messrs. Sullivan & Cromwell, New York, New York.

The offering of these Bonds is made only by the Official Statement, copies of which may be obtained in any State from such of the undersigned as may lawfully offer these securities in such State.

Salomon Brothers

Kidder, Peabody & Co.
Incorporated

Goldman, Sachs & Co.

Blyth Eastman Paine Webber
Incorporated

E. F. Hutton & Company Inc.

Bache Halsey Stuart Shields Incorporated

Bear, Stearns & Co.

A. G. Becker Warburg Paribas Becker

Alex. Brown & Sons

Dillon, Read & Co. Inc.

Donaldson, Lufkin & Jenrette Securities Corporation

Drexel Burnham Lambert Incorporated

A. G. Edwards & Sons, Inc.

The First Boston Corporation

Lazard Frères & Co.

Lehman Brothers Kuhn Loeb Incorporated

Merrill Lynch White Weld Capital Markets Group Merrill Lynch, Pierce, Fenner & Smith Incorporated

W. H. Morton & Co. (Div. of American Express Co.)

John Nuveen & Co. Incorporated

Rauscher Pierce Refsnes, Inc.

L. F. Rothschild, Unterberg, Towbin

Shearson Loeb Rhoades Inc.

Weeden Municipal Securities Div. of Moseley, Hallgarten, Estabrook & Weeden Inc.

Wertheim & Co., Inc.

Dean Witter Reynolds Inc.

Young, Smith & Peacock, Inc.

Adams, McEntee & Company

Allen & Company Incorporated

American Securities Corporation

Barr Brothers & Co., Inc.

George K. Baum & Company Incorporated

Boettcher & Company

J. C. Bradford & Co.

Brislin, Stanley & Woram

Clayton Brown & Associates, Inc.

Bruns, Nordeman, Rea & Co.

Butcher & Singer Inc.

Carolan & Co., Inc.

Craigie Incorporated

Dain Bosworth Incorporated

Fahnestock & Co.

First of Michigan Corporation

Foster & Marshall Inc.

Geo. B. Gibbons & Company Incorporated

Glickenhaus & Co.

Hutchinson, Shockey, Erley & Co.

Interstate Securities Corporation

Matthews & Wright, Inc.

McDonald & Company

R. H. Moulton & Company

The Ohio Company

Oppenheimer & Co., Inc.

Prescott, Ball & Turben

Samuel A. Ramirez & Co., Inc.

Rotan Mosle Inc.

Herbert J. Sims & Co., Inc.

Stephens Inc.

Stifel, Nicolaus & Company Incorporated

Swiss American Securities Inc.

Thomson McKinnon Securities Inc.

UMIC, Inc.

Underwood, Neuhaus & Co. Incorporated

Advest, Inc.

Altgelt & Company Incorporated

Bacon, Whipple & Co.

Robert W. Baird & Co. Incorporated

Baker, Watts & Co.

Banco Popular de Puerto Rico

William Blair & Company

The Cherokee Securities Company

City Securities Corporation

Langdon P. Cook & Co. Incorporated

Cumberland Securities Company, Inc.

A. Webster Dougherty & Co. Incorporated

Ehrlich-Bober & Co., Inc.

Eldredge & Co. Incorporated

Equitable Securities Corporation

J. J. B. Hilliard, W. L. Lyons, Inc.

William R. Hough & Co.

Howard, Weil, Labouisse, Friedrichs Incorporated

Investment Corporation of Virginia

Janney Montgomery Scott Inc.

Johnston, Lemon & Co. Incorporated

Legg Mason Wood Walker Incorporated

Liss, Tenner & Goldberg, Inc.

Mabon, Nugent & Co.

Moore & Schley Municipals, Inc.

E. A. Moos & Co. Incorporated

Park, Ryan Inc.

Parker/Hunter Incorporated

Piper, Jaffray & Hopwood Incorporated

Wm. E. Pollock & Co., Inc.

T. J. Raney & Sons, Inc.

The Robinson-Humphrey Company, Inc.

Rogers & Lamb

Roosevelt & Cross Incorporated

John J. Ryan & Co.

Sterling, Grace Municipal Securities Corporation

Stern Brothers & Co.

Stone & Youngberg

Tripp & Co., Inc.

Tucker, Anthony & R. L. Day, Inc.

Wheat, First Securities, Inc.

A. H. Williams & Co., Inc.

Zahner and Company

Adams, Harkness & Hill, Inc.

Allison-Williams Company

Alm, Kane, Rogers & Co.

Anderson & Strudwick Incorporated

Bateman Eichler, Hill Richards Incorporated

Berghoff, Marsh & Company Incorporated

Bevill, Bresler & Schulman Incorporated

Blunt Ellis & Loewi Incorporated

Burgess & Leith Incorporated

California Municipal Investors, Inc.

William G. Ceas & Company

Channer Newman Securities Company

The Chicago Corporation

Chiles, Heider & Co., Inc.

Coogan, Gilbert & Co.

R. W. Corby & Co., Inc.

Coughlin and Company, Inc.

Cowen & Co.

Crowell, Weedon & Co.

Doft & Co., Inc.

Dolphin & Bradbury

Douglas & Co. Municipals, Inc.

Drysdale Securities Corporation

James J. Duane & Co., Inc.

Elkins & Co.

Ellis & Carl Incorporated

Eppler, Guerin & Turner, Inc.

Ergood & Co.

Ernst & Co.

Ferris & Company Incorporated

First Albany Corporation

First Charlotte Corporation

First Mid America Inc.

Fischer, Johnson, Allen & Burke Incorporated

Folger Nolan Fleming Douglas Incorporated

Gerwin and Company

Gibralco, Inc.

Gibraltar Securities Co.

J. A. Glynn & Co.

Gradison & Company Incorporated

Gruntal & Co.

J. B. Hanauer & Co.

Hanauer, Stern & Co.

Hanifen, Imhoff & Samford, Inc.

Wm. P. Harper & Son & Company (A Division of Harper, McLean & Company)

Chester Harris & Co., Inc.

The Heitner Corporation

Frank Henjes & Company, Inc.

Herzfeld & Stern

Hibbard & O'Connor Municipal Securities, Inc.

Hopper Soliday & Co., Inc.

Horner, Barksdale & Co.

Howe, Barnes & Johnson, Inc.

The Illinois Company Incorporated

Johnson, Lane, Space, Smith & Co., Inc.

Josephthal & Co. Incorporated

Kirchner, Moore & Company

Kirkpatrick, Pettis, Smith, Polian Inc.

W. L. Knox & Co.

The Leedy Corporation

Leedy, Wheeler & Alleman Incorporated

Magnus & Company

Marcus, Stowell & Beye, Inc.

Marks, Allen & Co.

McLiney and Company

Mesirow & Company

N. D. Meyer & Co.

Midland Doherty Inc.

The Milwaukee Company

Morgan, Olmstead, Kennedy & Gardner Incorporated

W. H. Newbold's Son & Co., Inc.

Newhard, Cook & Co. Incorporated

Leo Oppenheim & Co., Inc.

J. A. Overton & Co.

Pacific Securities, Inc.

A. E. Pearson, Inc.

J. Lee Peeler & Company, Inc.

R. W. Peters, Rickel & Co., Inc.

D. A. Pincus & Co.

Purcell, Graham & Co., Inc.

Quinn & Co., Inc.

Raffensperger, Hughes & Co., Inc.

Raymond, James & Associates, Inc.

Riviere Securities Corporation

Arch W. Roberts & Co.

Rodman & Renshaw, Inc.

Roose, Wade Division of Wm. C. Roney & Co.

R. Rowland & Co. Incorporated

Schneider, Bernet & Hickman, Inc.

Seasongood & Mayer

Seattle-Northwest Securities Corporation

Securities Corporation of Iowa

Donald Sheldon & Co., Inc.

Silver & Cande, Inc.

Smith, Moore & Co.

Stix & Co. Inc.

Stoever, Glass & Co., Inc.

Summers & Company, Inc.

Swink & Company, Inc.

Thomas & Company, Inc.

Tollner & Bean, Inc.

Torrey & Co., Inc.

Traub and Company, Inc.

Burton J. Vincent, Chesley & Co.

Michael A. Weisser, Inc.

West Coast Securities Corporation

R. D. White & Company

A. Duncan Williams Incorporated

Ziegler Securities, Inc.

A. W. Zucker & Co.

SEWARD Mun. Electric Light Dept., Seventh St., 68434, Lawrence Fiala, mgr.; 1,750 met.; no gen.

SEWARD COUNTY RURAL PUBLIC POWER DISTRICT, Box 69, Seward, 68434, 402/643-3434, Ron D. Holsteen, mgr.; 2,219 met.; no gen.; pur. 40 million kwh; rev. $1,292,491.

SHICKLEY Utilities, 68436, Duane Johnson and Earl Friden, light comm.; 187 met.; no gen.

SIDNEY, City of, 1115 Thirteenth Ave., 69162, 308/254-5330, William A. Snell, city mgr. (1944); 2,881 met.; gen. 8,250 kw eng., 15.3 million kwh; pur. 16.4 million kwh; rev. $1,235,429.

SNYDER Electric Dept., 68664, 402/568-2550, Marvin M. Mead, mgr.; (1910); 190 met.; no gen.; rev. $152,897.

SOUTH CENTRAL PUBLIC POWER DISTRICT, Box 406, Nelson, 68961, 402/225-2351, Yale A. Meyer, mgr.; 3,730 met.; no gen.; pur. 68.6 million kwh; rev. $2,075,813.

SOUTH SIOUX CITY Electric Dept., 1615 Dakota Ave., 68776, 402/494-5800, Bill Bradish, comm.; 3,500 met.; no gen.; pur. 63 million kwh; rev. $1,412,539.

SOUTHERN NEBRASKA RURAL PUBLIC POWER DISTRICT, 1306 W. Third St., Box 340, Grand Island, 68801, 308/384-2350, Charles J. Hoke, gen. mgr.; 13,551 met.; no gen.; pur. 385.8 million kwh; rev. $9,948,310.

SOUTHWEST PUBLIC POWER DISTRICT, Box J, Palisade, 69040, 308/285-3295, Donald H. Husted, gen. mgr. (1945); 4,338 met.; no gen.; pur. 95.6 million kwh; rev. $3,113,784.

SPALDING Mun. Light & Power Plant, Box 268, 68665, 308/497-2661, Paul F. Semper, supt. (1954); 359 met.; gen. 2,303 kw, 2,153 kw eng., 150 kw hydro, 211,960 kwh; pur. 4.4 million kwh; rev. $112,537.

SPENCER Mun. Light Plant, Box 231, 68777, 402/968-3721, Lyle Karnes, supt.; 600 met.; no gen.; rev. $36,000.

STANTON Mun. Water & Light Plant, 68779, 402/439-2119, Archie Dillon, mayor; 650 met.; no gen.; pur. 68.7 million kwh.

STANTON COUNTY PUBLIC POWER DISTRICT, Box 308, Stanton, 68779, 402/439-2228, George E. Cunningham, mgr.; 1,491 met.; no gen.; pur. 26.8 million kwh; rev. $885,387.

STRATTON Water & Light Dept., 69043, Shelton Denisse, supt.; 300 met.; gen. 700 kw eng.; pur. 1.2 million kwh.

STROMSBURG Light & Water Dept., 68666, 402/764-2561, M. D. Simpson, supt. (1938); 630 met.; no gen.; pur. 7.2 million kwh; rev. $102,617.

STUART Mun. Water & Power, 68780, 402/924-3977, Ed Schneider, supt. (1922); 310 met.; gen. 1,328 kw eng., 1.4 million kwh; pur. 2.4 million kwh; rev. $121,000.

SUPERIOR Utilities, 135 W. Fourth St., 68978, 402/879-4711, Richard Elliott, dir., public works (1941); 1,384 met.; no gen.; pur. 23.2 million kwh; rev. $901,406.

SUTTON Light & Power Plant, Box 437, 68979, Rolly Kastens, comm.; 725 met.; no gen.; pur. 2.6 million kwh.

SYRACUSE Water & Light Plant, 578 Mohawk, 68446, Donald L. Block, mgr.; 775 met.; no gen.; pur. 8.4 million kwh; rev. $149,738.

TALMAGE Elec. Dept., City Hall, Box 66, 68448, 402/264-3715, Melvin Howe, supt.; 212 met.; no gen.; pur. 1.9 million kwh; rev. $42,970.

TECUMSEH, City of, Dept. of Utils., Box 417, 68450, 402/335-3025, Lloyd Hubbs, util. supt. (1890); 1,100 met.; gen. 5,308 kw eng., 900,400 kwh; pur. 18.4 million kwh; rev. $711,160. (Plant leased to Omaha Public Power District.)

TRENTON Mun. Light & Power, 223 W. C St., 69044, Fred Smith, supt.; 450 met.; gen. 880 kw eng., 1.1 million kwh; pur. 1.1 million kwh; rev. $59,039.

TRUMBULL Electric Light Dept., 68980, Roger Rhodes, light comm.

TWIN VALLEYS PUBLIC POWER DISTRICT, Box 160, Cambridge, 69022, 308/697-3315, Paul Liess, mgr.; 4,199 met.; no gen.; pur. 58.6 million kwh; rev. $1,985,320.

UNIVERSITY OF NEBRASKA, Physical Plant Administration, 1700 Y St., Lincoln, 68508, Verne Traudt, util. mgr.; gen. 6,000 kw steam, 17.5 million kwh; pur. 22.5 million kwh; rev. $180,000.

WAHOO Water & Light Dept., 605 N. Broadway, 68006, 402/443-3222, Donald Peterson, supt. (1908); 1,683 met.; gen. 14,305 kw eng., 23.8 million kwh; pur. 707,000 kwh; rev. $490,698.

WAKEFIELD City Light Plant, 303 Oak St., Box 179, 68784, 402/287-2547, Kenneth Baker, plant supt. (1917); 575 met.; gen. 4,870 kw eng., 9 million kwh; pur. none.

WALTHILL Mun. Electric Dept., 68067, Leford King, supt.; 350 met.; no gen.; pur. 4.4 million kwh.

WAUNETA Mun. Utilities, 69045, 308/394-5390, -5201, Arleigh Kincaid, supt. of util. (1948); 549 met.; pur. 8.2 million kwh; rev. $182,275.

WAYNE Mun. Power Plant, 208 S. Main St., 68787, 402/375-2866, Herman Wacker, supt. (1920); 1,950 met.; gen. 15,125,000 kw eng.; 33.2 million kwh; pur. 30.2 million kwh; rev. $1,126,454.

WAYNE COUNTY PUBLIC POWER DISTRICT, 303 Logan, Box 190, Wayne, 68787, 402/375-1360, Calvin W. Comstock, mgr.; 2,570 met.; no gen.; pur. 4.9 million kwh; rev. $1,379,190.

WEST POINT Light & Water Works, 201 S. Main, 68788, 402/372-2466, Ralph Eby, city engr.(1922); 1,650 met.; gen. 8,565 kw eng., 697,470 kwh; pur. 23.3 million kwh; rev. $801,193.

WHEAT BELT PUBLIC POWER DISTRICT, 2104 Illinois St., Box 177, Sidney, 69162, 308/254-5871, Gene M. Lienemann, gen. mgr. (1947); 3,489 met.; no gen.; pur. 126.7 million kwh; rev. $3,637,456.

WILBER Water & Light Dept., 68465, Gordon Quincy, supt.; 700 met.; gen. 2,430 kw eng.

WILCOX Light & Water Comm., 68982, John E. Stratman, chair.; 200 met.; no gen.

WINSIDE Power & Light Dept., Box 206, 68790, 402/286-4422, Ronald Hanson, supt.; 220 met.; no gen.; pur. 1.2 million kwh; rev. $38,266.

WISNER Mun. Electric Light & Water Plant, 1115 Ave. E, Box 367, 68791, 402/529-6616, Roland Johnson, elec. engr.; 600 met.; gen. 1,905 kw eng.; pur. none.

WOOD RIVER Light & Water Dept. 68883, Wayne Woods, supt.

WYMORE Water & Light Dept., 302, S. Sixth St., 68466, 402/645-3377, John Sullivan, supt.; 900 met.; no gen.; pur. 8 million kwh.

YORK COUNTY RURAL PUBLIC POWER DISTRICT, 1010 Lincoln Ave., Box 219, York, 68467, 402/362-3355, Hilary Neesen, mgr., 3,550 met.; no gen.; pur. 61 million kwh; rev. $1,989,887.

The following Nebraska communities own their own municipal electric systems which are operated by Nebraska Public Power District under lease agreements:

ABIE, ADAMS, AINSWORTH, ALDA, ALEXANDRIA, ALLEN, AMHERST, ANOKA, ARCADIA, ASHTON, ATKINSON, ATLANTA, AURORA, AXTELL, BANCROFT, BARADA, BASSETT, BAZILE MILLS, BEAVER CROSSING, BEE, BELDEN, BELLWOOD, BEEMER, BELVIDERE, BENEDICT, BERTRAND, BIG SPRINGS, BLADEN, BLOOMINGTON, BLUE SPRINGS, BOELUS, BRADY, BRISTOW, BROADWATER, BRULE, BRUNING, BRUNO, BRUNSWICK, BURCHARD, BUTTE, BYRON.

CAIRO, CARLETON, CENTER, CHADRON, CHAPMAN, CLARKS, CLATONIA, CLAY CENTER, CLEARWATER, CLINTON, CODY, COLERIDGE, COMSTOCK, CONCORD, CORDOVA, CORTLAND, COTESFIELD, CRAIG, CRAWFORD, CREIGHTON, CROFTON, CROOKSTON, CUSHING, DANNEBROG, DAWSON, DAYKIN, DEWEESE, DIXON, DODGE, DONIPHAN, DUBOIS, DWIGHT, EDISON, ELBA, ELGIN, ELM CREEK, ELSIE, ELWOOD, EMMET, EUSTIS, EWING, EXETER, FAIRFIELD, FARWELL, FIRTH, FORDYCE, FUNK, GARLAND, GENEVA, GIBBON, GOEHNER, GORDON, GRAFTON, GREELEY, GRESHAM, GUIDE ROCK, HALLAM, HARDY, HARTINGTON, HARVARD, HAY SPRINGS, HEARTWELL, HENDERSON, HENDLEY, HOMER, HORDVILLE, HOSKINS, HUBBARD, HUMBOLDT, HUNTLEY, INMAN, JACKSON, KEARNEY, KENESAW, KILGORE.

LAWRENCE, LEWELLEN, LONG PINE, LOUP CITY, LUSHTON, LYNCH, McCOOK, McCOOL, McGREW, McLEAN, MADRID, MAGENT, MARQUETTE, MARSLAND, MARTINBURG, MASKELL, MEADOW GROVE, MELBETA, MERRIMAN, MILFORD, MILLER, MILLIGAN, MINATARE, MURRAY.

NAPONEE, NENZEL, NEHAWKA, NEWCASTLE, NEWPORT, NORA, NORFOLK, NORTH LOUP, OAK, OAKDALE, OAKLAND, OBERT, OGALLALA, OHIOWA, ONG, O'NEILL, ORCHARD, ORLEANS, OSCEOLA, OSHKOSH, OSMOND, OVERTON, PAGE, PALMER, PAWNEE CITY, PHILLIPS, PICKRELL, PILGER, PLATTSMOUTH, PLEASANT DALE, PLEASANTON, PLYMOUTH, PONCA.

RAVENNA, REPUBLICAN CITY, RISING CITY, RIVERDALE, RIVERTON, ROCKVILLE, ROYAL, RUSHVILLE, RUSKIN, SARONVILLE, SCOTIA, SCOTTSBLUFF, SCRIBNER, SHELBY, SHELTON, SHUBERT, SILVER CREEK, STAMFORD, STAPLEHURST, STEINAUER, STELLA, STERLING, STOCKHAM, STRANG, SURPRISE, SUTHERLAND, SWANTON.

TABLE ROCK, TAMORA, TEKAMAH, THAYER, TILDEN, TOBIAS, UEHLING, ULYSSES, UNION, UTICA, VALPARAISO, VENANGO, VERDON, VIRGINIA, WACO, WATERBURY, WAUSA, WESTERN, WHITNEY, WINNEBAGO, WINNETOON, WOLBACH, WYNOT, YORK.

The following Nebraska communities own their own municipal electric systems which are operated by Loup Power District under lease agreements:

ALBION, BELGRADE, CEDAR RAPIDS, COLUMBUS, CORNLEA, CRESTON, DUNCAN, FULLERTON, GENOA, HUMPHREY, LINDSAY, MONROE, NEWMAN GROVE, PETERSBURG, PLATTE CENTER, PRIMROSE, RAEVILLE, RICHLAND, ST. EDWARD, TARNOV.

NEVADA

ALAMO POWER DISTRICT NO. 3, Box 188, Alamo, Nev., 89001, 702/725-3335, James Perkins, mgr.; 177 met.; no gen.; pur. 3.8 million kwh; rev. $52,608.

BOULDER CITY, City of, Electrical Distribution Dept., 900 Arizona St., 89005, 702/293-4300, Terry Zerkle, city mgr. (1960); 3,400 met.; no gen.; pur. 85.5 million kwh; rev. $1,276,000.

CALIENTE Public Utilities, City Hall, Box 150, 89008, 702/726-3782, Roy F. McWilliams, supt., (1943); 560 met.; no gen.; pur. 13.5 million kwh.; rev. $190,000.

COLORADO RIVER COMMISSION OF NEVADA, Box 1748, Las Vegas, 89101. Wholesale only.

FALLON Mun. Electric System, 55 W. Williams Ave., 89406, 702/423-5107, Ben T. Bartlett, city engr. (1912); 2,091 met.; no gen.; pur. 25.4 million kwh; rev. $1,029,410.

LINCOLN COUNTY POWER DIST. No. 1, Box 101, Pioche, Nev., 89043, 702/962-5122, William F. Lynch, mgr.; 80 met. (wholesale only); no gen.; pur. 57.7 million kwh; rev. $400,761.

MINERAL COUNTY POWER SYSTEM, 405 Sierra Way, Box 808, Hawthorne, Nev., 89415, 702/945-3366, Otto K. Schoonover, mgr.; 1,969 met.; no gen.; pur. 18.4 million kwh; rev. $441,035.

OVERTON POWER DISTRICT NO. 5, 261 S. Jones St., Box 374, Overton, 89040, 702/397-2512, A. Kent Bloomfield, mgr. (1938); 1,924 met.; no gen.; pur. 57.8 million kwh; rev. $1,200,000.

PIOCHE Pub. Util., 89043, 702/962-5840; 300 met.; no gen.; pur. 5 million kwh.

TRUCKEE-CARSON IRRIGATION DISTRICT, 152 N. Maine, Fallon, 89406, 702/423-2141. **(System leased to Sierra Pacific Power Co.)**

NEW HAMPSHIRE

ASHLAND Electric Dept., Highland St., P.O. Box 517, 03217, 603/968-4432, John C. Hughes, chmn., bd. of elec. comm. (1917); 950 met.; no gen.; pur. 14.1 million kwh; rev. $717,974.

LITTLETON Water & Light Dept., 34 Main St., 03561, 603/444-2916, John L. Cassidy, supt. (1903); 3,000 met.; no gen.; pur. 30.8 million kwh; rev. $1,156,000.

NEW HAMPTON Electric Light Dept., 03256, 603/744-8551; 150 met.; no gen.; pur. 2.2 million kwh; rev. $50,000.

WOLFEBORO Mun. Electric Dept., S. Main St., Box 629, 03894, 603/569-3900, Guy L. Krapp, mgr. (1897); 3,451 met.; gen. 2,620 kw eng., 138,900 kwh; pur. 30.1 million kwh; rev. $1,434,000.

WOODSVILLE Water & Light Dept., 3 N. Court St., 03785, 603/747-2442, Hayden Waterhouse, supt. (1887); 1,050 met.; no gen., pur. 9.2 million kwh; rev. $470,336.

NEW JERSEY

BUTLER Mun. Electric Dept., Belleview Ave., 07405, 201/838-0063, Hallerton H. Bush, supt. pub. wks. (1920); 9,000 met.; rev. $5,000,000.

LAVALLETTE Electric Dept., Mun. Bldg., 08735, William C. Bernhardt, supt.

MADISON Water & Light Dept., Kings Road, 07940, 201/377-8000, M. J. Prudente, bus. mgr. (1900); 5,200 met.; no gen.; pur. 73.6 million kwh; rev. $2,733,029.

MILLTOWN Electric Dept., 39 Washington Ave., 08850, 201/828-2100, G. R. Newman, supt.; 2,437 met.; no gen.; pur. 35.2 million kwh; rev. $1,387,314.

PARK RIDGE, Borough of, Dept. of Pub. Utilities, 53 Park Ave., 07656, 201/391-2113, Robert F. Kenney, supt. (1904); 3,045 met.; no gen.; pur. 34.1 million kwh; rev. $1,779,954.

PEMBERTON Borough Electric, 114 Hanover St., 08068, 609/894-8222, Harold Beck, Sr., supt. (1921); 500 met.; no gen.; pur. 6 million kwh; rev. $350,000.

SEASIDE HEIGHTS, Borough Electric, Grant Ave., 08751, 201/793-0359, Leonard Ipri, supt.; 1,800 met.; no gen.

SOUTH RIVER Bd. of Public Works, 33 Gordon St., 08882, Thomas Noto, supt.; 4,588 met.; gen. 2,500 kw eng; pur. 40 million kwh; rev. $1,867,800.

VINELAND Electric Utility, Seventh and Wood Sts., 08360, 609/691-3000, Michael Sesok, Jr., gen. mgr. (1900); 15,686 met.; gen. 96,000 kw, 67,000 kw steam, 29,000 kw gas turbine, 255.1 million kwh; pur. 85.1 million kwh; rev. $17,383,333.

NEW MEXICO

AZTEC Util. System, 201 W. Chaco, 87410, 505/334-9462, Dr. Harold W. Lavender, city mgr. (1963); 2,200 met.; pur. 16.2 million kwh; rev. $795,000.

CLAYTON Mun. Electric System, 1 Chestnut St., 88415, 505/374-2711, Eli M. Garcia, city mgr.; 1,400 met.; gen. 200 kw wind; pur. none; rev. $280,000.

FARMINGTON Electric Utility System, Box 900, 87401, 505/327-7701, Wm. C. Lewis, elec. util. dir., (1929); 22,735 met.; gen. 33.2 mw, 31.0 mw steam, 2.2 mw hydro; 200 kw wind; pur. 241.1 million kwh; rev. $15,851,080.

GALLUP Joint Utilities, Box 1270, 87301, 505/863-6871, Robert C. Noe, util. dir. (1941); 7,164 met.; no gen.; pur. 148.8 million kwh; rev. $5,977,000.

LOS ALAMOS County Utilities, Box 30, Los Alamos, 87544, 505/662-4122, Robert E. Jensen, mgr. (1968); 4,466 met.; no gen.; pur. 45.8 million kwh; rev. $2,717,595.

RATON Public Service Co., 224 Savage Ave., Box 40, 87740, 505/445-9861, Nardi Gabriele, gen. mgr. (1928); 3,905 met.; gen. 10,500 kw steam, 46.6 million kwh; pur. 15 million kwh; rev. $1,701,236.

SPRINGER Elec. Dept., P.O. Box 488, 87747; 505/483-2682, Henry Arellano, fin. dir.; 2,000 met.; no gen.; rev. $209,526.

TRUTH OR CONSEQUENCES Joint Utility System, 605 Sims St., 87901, 505/894-6671, Quentin Drunzer, city mgr.; 2,700 met.; no gen.; pur. 26.3 million kwh; rev. $916,000.

NEW YORK

AKRON Mun. Electric Utility, 21 Main St., Box 128, 14001, 716/542-9636, David M. Barnes, supt. (1903); 1,258 met.; no gen.; pur. 28.8 million kwh; rev. $499,465.

ANDOVER Electric Utilities, 4 Main St., Box 721, 14895, 607/478-8452, Barry Rohrabacher, supt.; 507 met.; no gen.; pur. 4.8 million kwh; rev. $93,700.

ANGELICA, Village of, White St., 14709, 716/466-7431, Frank Kern, mayor, (1930), met.; no gen.; pur. 6 million kwh, rev. $114,000.

ARCADE Mun. Electric Dept., 17 Church St., 14009, 716/492-1111, Howard W. Payne, supt. pub. wks. (1909); 2,793 met.; no gen.; pur. 96.9 million kwh; rev. $1,197,009.

BATH Electric, Gas & Water Systems, Municipal Bldg., Liberty St., Box 310, 14810, 607/776-2173, Wesley J. Payne, dir. (1915); 3,336 met.; no gen.; pur. 50 million kwh; rev. $743,600.

BERGEN Mun. Electric Dept., 16 N. Lake St., 14416, 716/494-1513, A. Richard White, supt. pub. wks. (1909); 460 met.; no gen.; pur. 8.7 million kwh; rev. $150,425.

BOONVILLE Municipal Commission, Utica Blvd., Box 59, 13309, 315/942-4461, John W. Gilbert, supt. (1903); 2,214 met.; no gen.; pur. 38.9 million kwh.

BROCTON Mun. Electric System, 34 W. Main St., 14716, 716/792-4160, Roderick Mawhir, supt. (1903); 674 met.; no gen.; pur. 8.9 million kwh.

CASTILE Mun. Electric Light System, 51 N. Main St., 14427, 716/493-5340, Lynn D. Washburn, supt. pub. wks. (1903); 653 met.; no gen.; pur. 4.8 million kwh; rev. $106,422.

CHURCHVILLE, Village of, 9 E. Buffalo St., 14428, 716/293-7320, Ronald J. Trinkl, supt. public works, (1921), 600 met.; gen. 22,222 kw, 21,947 kw hydro, 275 kw nuclear; pur. 9.9 million kwh; rev. $186,027.

ENDICOTT Mun. Light Plant, 1009 E. Main St., 13760, 607/754-2400, Albert R. Korbar, Jr., exec. secy., (1906); 2,925 met.; no gen.; pur. 37.5 million kwh; rev. $804,225.

FAIRPORT Mun. Comm., 31 S. Main St., 14450, P.O. Box 500, 716/223-0440, Robert N. vaisey, gen. mgr. (1901); 10,332 met.; no gen.; pur. 229.4 million kwh; rev. $3,389,238.

FRANKFORT Power and Light, Litchfield St., 13340, 315/894-8611, John S. Migliore, supt. (1910); 1,561 met.; no gen.; 12.4 million kwh.

FREEPORT Mun. Light Plant, 46 N. Ocean Ave., 11520, 516/378-4000, Ludovic Long, supt. (1896); 13,843 met.; gen. 50,500 kw, 32,500 kw eng., 18,000 kw gas turbine, 30.6 million kwh; pur. 141.6 million kwh.

GOUVERNEUR, Village of, Municipal Bldg., 33 Clinton St., 13642, 315/287-1720, Ronald Cochrane, supt. (hydro plant for municipal operations only).

GREENE Electric Dept., 4 S. Canal St., Box 207, 13778, 607/656-4500, Clifford Amell, supt; 1,100 met.; no gen.; pur. 20.4 million kwh; rev. $271,287.

GREEN ISLAND Electric Light Comm., 20 Clinton St., 12183, 518/273-2201, John W. Demarest, supt. (1895); 1,260 met.; no gen.; pur. 4 million kwh.

GREENPORT Mun. Electric Light Plant, 236 Third St., 11944, 516/477-1748, James I. Monsell, supt. (1899); 1,670 met.; gen. 6,965 kw eng., 0.7 million kwh; pur. 16.1 million kwh.

GROTON, Village of, Mun. Electric Dept., 108 Cortland St., 13073, 607/898-3001, Frank W. McLear, supt. (1935); 800 met.; no gen.; pur. 16 million kwh; rev. $268,800.

HAMILTON Mun. Power Station, 3 Broad St., 13346, 315/824-1111, John Rathbone, village engr. (1895); 1,345 met.; no gen.; pur. 45.9 million kwh; rev. $684,565.

HOLLEY Electric & Water Dept., 7 Franklin St., 14470, 716/638-6610, Raymond E. Neale, supt. (1889); 825 met.; no gen.; pur. 15.5 million kwh.

ILION Bd. of Light Comm., Municipal Bldg., 49 Morgan St., 13357, 315/895-7749, Kevin J. Manfreda, electric utility supt. (1901); 3,745 met.; no gen.; pur. 52 million kwh; rev. $910,185.

JAMESTOWN Bd. of Public Utilities, 200-212 E. Third St., 14701, 716/661-2385, James S. Pullan, gen. mgr., (1891); 19,670 met.; gen. 65,000 kw steam, 152.8 million kwh; pur. 324.5 million kwh; rev. $10,218,809.

LAKE PLACID Mun. Electric, 301 Main St., 12946, 518/523-2021, Charles White, supt. (1906); 3,001 met.; no gen.; pur. 65.9 million kwh; rev. $1,291,318.

LITTLE VALLEY, Village of, Electric Light Dept., Municipal Bldg., 14755, 716/938-9151, Lawrence R. Holtz, supt. (1876); 980 met.; no gen. 3,600 kw hydro.

MARATHON Electric Systems, 18 Tannery St., 13803, 607/849-6795, Robert H. Braman, supt. (1901); 652 met.; no gen.; pur. 11.5 million kwh; rev. $167,025.

MASSENA Elec. Dept., 200 E. Orvis St., 13662, met. 5,700. **Voted to establish municipal electrical system, May, 1974.**

MAYVILLE Electric Light Dept., Box 188, 14757, 716/753-2125, Ray Frost, (1896); 750 met.; no gen.; pur. 14.9 million kwh; rev. $229,591.

MOHAWK Mun. Comm., 28 Columbia St., 13407, 315/866-4170, William D. Wainwright, utility sup., (1904); 1,250 met.; no gen.; pur. 15.7 million kwh; rev. $256,872.

PENN YAN Mun. Board, 2 Maiden Lane, 14527, 315/536-3374, Wesley G. Ryder, utils. mgr. (1905); 2,512 met.; no gen.; pur. 41.6 million kwh; rev. $686,804.

PHILADELPHIA Mun. Electric System, 56 Main St., 13673, 315/642-3452, Bernard A. Rosbrook, supt. (1906); 364 met.; no gen.; pur. 6.5 million kwh; rev. $102,386.

PLATTSBURGH Mun. Lighting Dept., 6 Miller St., 12901, 518/563-2200, George D. Reich, mgr. (1941); 7,521 met.; no gen.; pur. 431 million kwh; rev. $4,524,113.

POWER AUTHORITY OF THE STATE OF NEW YORK, 10 Columbus Circle, New York, N.Y., 10019, 212/397-6200, George T. Berry, pres. (1931); 258 met.; gen. 4,512,000 kw, 4,102,000 kw hydro, 410,000 kw nuclear, 28,521.1 million kwh; rev. $143,363,169.

RICHMONDVILLE Power & Light, 22 E. Main St., 12149, 518/294-7734, Frank C. Archer, supt. (1918); 800 met.; no gen.; pur. 7.5 million kwh; rev. $181,245.

ROCKVILLE CENTRE Mun. Electric System, 110 Maple Ave., Box 950, 11571, 516/766-0300, Patrick J. Hester, supt., (1898); 9,700 met.; gen. 32,400 kw eng., 54 million kwh; pur. 79.8 million kwh; rev. $5,105,971.

ROUSES POINT Electric System, 35 Pratt St., 12979, 518/297-5502, Alfred S. O'Brian, supt. (1903); 800 met.; no gen.; pur. 7.9 million kwh; rev. $275,515.

SALAMANCA Water & Light Dept., 225 Wildwood Ave., 14779, 716/945-3130, James M. Brundage, gen. mgr. (1913); 3,200 met.; no gen.; pur. 41.3 million kwh; rev. $682,264.

SHERBURNE Mun. Electric Dept., Municipal Bldg., 13460, 607/674-2300, Donald F. Jeffrey, supt. (1907); 1,547 met.; no gen.; pur. 31.5 million kwh; rev. $570,020.

SHERRILL Power and Light 601 Sherrill Rd., 13461, 315/363-6479, Lawrence A. Pickard, mgr. (1977); 1,250 met.; no gen.; pur. 48 million kwh; rev. $726,000.

SILVER SPRINGS Electric Dept., 45 N. Main St., 14550, 716/493-2500, Robert E. Kupp, supt. pub. wks. (1912); 359 met.; no gen.; pur. 2.9 million kwh.

SKANEATELES Village of, 46 E. Genesee St., 13152, 315/685-5628, James A. Buff, supt. (1900); 1,200 met.; no gen.; pur. 18.5 million kwh; rev. $386,000.

SOLVAY Water & Elec. Light Dept., 3143 Milton Ave., 13209, 315/468-6229, M. V. Raman, mgr. (1896); 4,100 met.; no gen.; pur. 191.1 million kwh.

SPENCERPORT Mun. Electric, 27 West Ave., 14559, 716/352-4771, James C. Bleier, supt. (1916); 1,919 met.; no gen.; pur. 40.8 million kwh; rev. $605,813.

SPRINGVILLE Electric Light & Power, 5 W. Main, 14141, 716/592-4936, John Lipoff, elec. supt. (1895); 1,973 met.; gen. 500 kw hydro, 2.5 million kwh; pur. 33.3 million kwh; rev. $469,027.

THERESA Mun. Light Comm., 231 Commercial St., 13691, 315/628-4425, Paul Decker, supt. (1906); 370 met.; no gen.; pur. 3.2 million kwh; rev. $52,249.

TUPPER LAKE Mun. Electric Systems, 53 Park St., 12986, 518/359-3341, Donald T. Trudeau, supt. (1903); 2,600 met.; no gen.; pur. 45.6 million kwh; rev. $750,586.

WATERTOWN Mun. Electric Dept., Municipal Bldg., 13601, 315/788-7020, John J. Donoghue, supt. (1924); 58 met., gen. 5,400 kw hydro, 31.2 million kwh; pur. 771,000 kwh; rev. $380,000.

WATKINS GLEN Electric Dept., 1007 Ferry St., 14891, 607/535-2042, Eugene R. Thorpe, supt.; 1,207 met.; no gen.; pur. 9.7 million kwh.

WELLSVILLE Water & Light Dept., 156 N. Main St., 14895, 716/593-4950, James C. Waterman, supt. (1915); 2,490 met.; no gen.; pur. 45.8 million kwh; rev. $736,433.

WESTFIELD Bd. of Public Utilities, 23 Elm St., 14787, 716/326-3011, Richard A. Crofoot, supt.; 2,575 met.; no gen.; pur. 55.9 million kwh.

NORTH CAROLINA

ALBEMARLE Light Dept., Box 190, 28001, 704/982-0131, D. Lendell Smith, Jr., dir. pub. wks.; 8,795 met.; no gen.; pur. 196.7 million kwh; rev. $5,561,090.

APEX Lighting Dept., Box 250, 27502, 919/362-8661, Jesse E. Forrest, dir. pub. wks.; 1,483 met.; no gen.; pur. 26.3 million kwh; rev. $862,349.

AYDEN, Town of, Box 217, 28513, 919/746-4152, Michael E. Finney, dir. of utils., (1920); 2,968 met.; no gen.; pur. 38.5 million, rev. $2,405,424.

BELHAVEN Electric Dept., 27810, 919/943-3105, W. Gary Sigmon, dir.; 1,060 met.; no gen.; pur. 54.9 million kwh; rev. $719,998.

BENSON Power & Light Dept., Box 157, 27504, 919/894-4953, Z. K. Lucas, dir.; 1,319 met.; no gen.; pur. 21.7 million kwh; rev. $774,944.

BLACK CREEK Electric Dept., Box 8, 27813, 919/243-6439, Stanley Tedder, dir. pub. wks.; 466 met.; no gen.; pur. 6.1 million kwh; rev. $254,279.

BOSTIC Electric Dept., 28018, 704/245-5108, Catherine G. Jolley, clerk; 151 met.; no gen.; pur. 1.6 million kwh; rev. $56,221.

CHERRYVILLE Light Dept., 28021, 704/435-9132, Ralph Childers, dir.; 1,988 met.; no gen.; pur. 42.9 million kwh; rev. $1,111,168.

CLAYTON Lighting Dept., 231 E. Second St., Box 777, 27520, 919/553-6175, Ed Parks, supt. (1925); 2,008 met.; no gen.; pur. 28.3 million kwh; rev. $968,264.

CONCORD Bd. of Light & Water Comm., Box 567, 28025, 704/786-6161, Don T. Howell, dir. util. (1901); 11,421 met.; no gen.; pur. 245.7 million kwh; rev. $8,210,041.

CORNELIUS Mun. Utilities, Box 66, 28031, 704/892-6031, Kermit W. Ballard, dir. util.; 584 met.; no gen.; pur. 9.2 million kwh; rev. $286,988.

DALLAS Electric Dept., 131 N. Gaston St., 28034, 704/922-3176, James Cogdill, supt. (1925); 2,468 met.; no gen.; pur. 37.5 million kwh; rev. $1,130,059.

DREXEL Electric Dept., Box 188, 28619, 704/437-7421, Harold L. Dean, dir. util. (1913); 939 met.; no gen.; pur. 11 million kwh; rev. $356,391.

EDENTON Utilities, W. Freemason St., Box 300, 27932, 919/482-4414, James D. Martin, dir. (1900); 3,063 met.; no gen.; pur. 62.4 million kwh; rev. $3,521,966.

ELIZABETH CITY, City of, Public Utility Comm., Box 347, 27909, 919/338-3981, Tommy M. Combs, city mgr. (1926); 8,000 met.; no gen.; pur. 166.9 million kwh; rev. $7,536,763.

ENFIELD Electric Utilities, Box 87, 27823, 919/445-5586, Joseph N. Adkins, supt.; 1,489 met.; no gen.; pur. 22.8 million kwh; rev. $880,945.

FARMVILLE, Town of, Box 87, 27828, 919/753-3021, James A. Wooten, Jr., dir. of utils. (1915); 2,245 met.; pur. 46.6 million kwh; rev. $1,722,688.

FAYETTEVILLE Public Works Comm., 508 Person St., Drawer 1089, 28302, 919/483-3814, Ray A. Muench, Jr., admin. (1905); 45,000 met.; gen. 150,000 kw gas turbine, 24.9 million kwh; pur. 1,234.9 million kwh; rev. $43,932,825.

FOREST CITY Electric Dept., 12 N. Powell St., 28043, 704/245-0148, Marvin Kiser, Jr., dir.; 3,699 met.; no gen.; pur. 81.9 million kwh; rev. $2,500,237.

FOUNTAIN Mun. Electric Dept., Box 194, 27839, 919/749-2881, Floyd Lucas, dir.; 325 met.; no gen.; pur. 3.8 million kwh; rev. $174,723.

FREMONT Light & Water Dept., 27830, 919/242-5151, Graham Wells, supt.; 836 met.; no gen.; pur. 11.1 million kwh; rev. $417,374.

GASTONIA, City of, Box 1748, 28052, 704/864-3211, E. Graham Wilson, dir. util. (1900); 19,983 met.; no gen.; pur. 421.7 million kwh; rev. $14,927,354.

GRANITE FALLS Electric Light Plant, Drawer 10, 28630, 704/396-3131, Edwin D. White, dir. pub. wks.; 1,357 met.; no gen.; pur. 22.8 million kwh; rev. $777,257.

GREENVILLE Utilities Comm., Box 1847, 27834, 919/752-7166, Charles

O'H. Horne, Jr., dir. util. (1905); 24,327 met.; no gen.; pur. 626.5 million kwh; rev. $33,234,766.

HAMILTON Lighting System, Box 238, 27840, 919/798-2001 (1922); 230 met.; no gen.; pur. 2.4 million kwh; rev. $115,484.

HERTFORD Lighting System, Box 32, 27944, 919/426-5311, W. D. Cox, supt.; 1,326 met.; no gen.; pur. 16.7 million kwh; rev. $685,684.

HIGHLANDS Mun. Plant, Box 563, 28741, 704/526-2118, Arnold Keener, supt.; 1,370 met.; pur. 11.3 million kwh; rev. $209,044.

HIGH POINT, City of, Box 230, 27261, 919/887-2511, L. C. Williams, Jr., dir. util. (1893); 25,250 met.; no gen.; pur. 531.9 million kwh; rev. $18,168,722.

HOBGOOD Mun. Electric Dept., Box 217, 27843, 919/826-4283, Sidney G. Burnette, util. comm.; 444 met.; no gen.; pur. 3.4 million kwh; rev. $152,444.

HOOKERTON Electric Dept., Box 296, 28583, 919/747-3816, Bruce Dunn, supt.; 331 met.; no gen.; pur. 4.8 million kwh; rev. $196,490.

HUNTERSVILLE Electric Dept., 28078, 704/875-6541, Steve Stewart, mgr.; 562 met.; no gen.; pur. 15.1 million kwh; rev. $447,713.

KINGS MOUNTAIN Mun. Electric System, Box 429, 28086, 704/739-2563, John Henry Moss, Mayor (1903); 3,042 met.; no gen.; pur. 76.8 million kwh; rev. $2,184,419.

KINSTON Public Utilities, 207 E. King St., Box 339, 28501, 919/527-2111, Elwood R. Whaley, dir. util.; 13,120 met.; no gen.; pur. 296 million kwh; rev. $9,855,535.

LA GRANGE Mun. Electric Dept., 28551, 919/566-3186, E. B. Walters, supt.; 1,285 met.; no gen.; pur. 17 million kwh; rev. $662,443.

LANDIS Light & Power Dept., 136 N. Central Ave., Drawer 165, 28088, 704/857-2411, W. C. Deadmon, dir. util.; 2,185 met.; no gen.; pur. 29.8 million kwh; rev. $959,697.

LAURINBURG Light & Water Dept., Box 312, 28352, 919/276-2364, P. G. Vandenberg, city mgr.; 4,269 met.; no gen.; pur. 80.1 million kwh; rev. $2,697,007.

LEXINGTON Water, Light & Power Dept., City Hall, Box 649, 27292, 704/246-2680, Bruce L. Kirk, supt. (1905); 13,492 met.; no gen.; pur. 301.6 million kwh; rev. $9,691,028.

LINCOLNTON Light & Power Dept., Box 617, 28092, 704/735-8348, Ronnie Dedmon, gen. supt.; 2,190 met.; no gen.; pur. 42.4 million kwh; rev. $1,243,749.

LOUISBURG Light & Water Plant, 110 W. Nash St., 27549, 919/496-4145, Harold C. Foster, supt.; 1,612 met.; no. gen.; pur. 33.8 million kwh; rev. $1,196,469.

LUCAMA Light Plant, 27851, 919/239-0560, Donnie Barnes, supt.; 770 met.; no gen.; pur. 6.9 million kwh; rev. $172,271.

LUMBERTON Utilities Dept., 501 E. Fifth St., 28358, 919/738-2255, J. M. Reynolds, dir. (1915); 7,442 met.; no. gen.; pur. 199.1 million kwh; rev. $6,240,393.

MACCLESFIELD Elec. Dept., 27852, 919/827-4823, Lester Webb, supt.; 230 met.

MAIDEN Lighting System, Box 125, 28650, 704/428-8178, Billy Price, dir.; 823 met.; no gen.; pur. 28.1 million kwh; rev. $846,276.

MONROE Water & Light Dept., Box 69, 28110, 704/283-8165, J. E. Hinkel, city mgr. (1900); 5,978 met. no gen.; pur. 229.4 million kwh; rev. $6,553,149.

MORGANTON, City of, Drawer 430, 28655, 704/437-8863, Douglas O. Bean, city mgr. (1916); 6,225 met.; no gen.; pur. 184.8 million kwh; rev. $5,702,495.

MURPHY Electric Power Bd., Box 130, 28906, 704/837-2211, John Carringer, mgr. (1939); 2,347 met.; no. gen.; pur. 95.2 million kwh; rev. $2,346,502. (TVA power distributor)

NEW BERN, City of, Box 1129, 28560, 919/633-5161, W. W. Bedwell, dir. of utils. (1906); 12,500 met.; no gen.; pur. 247.3 million kwh; rev. $9,172,000.

NEW RIVER LIGHT & POWER, subsidiary of Appalachian State University, Box 1130, Boone, 28607, 704/264-3671, Donald R. Austin, gen. mgr.; 4,750 met.; pur. 118.9 million kwh; rev. $3,872,838.

NEWTON Electric Dept., Drawer 550, 28658, 704/464-2031, Glen P. Sims, supt. pub. wks.; 3,149 met.; no gen.; pur. 57.9 million kwh; rev. $1,922,609.

OAK CITY Mun. Utilities, 27857, 919/798-7721, Ernest Bunting, supt.; 246 met.; no gen.; pur. 2.7 million kwh; rev. $96,679.

PIKEVILLE Electric Dept., Box 127, 27863, 919/242-5126, Raymond Glover, supt.; 496 met.; no gen.; pur. 7.2 million kwh; rev. $268,989.

PINETOPS, Town of, Drawer C, 27864, 919/827-4435, Augusta Wiggins, Jr., supt.; 650 met.; no gen.; pur. 8.6 million kwh; rev. $341,948.

PINEVILLE Electric Dept., 200 Dover St., 28134, 704/889-2291, Jack G. Crump, town mgr. (1938); 1,081 met.; no. gen.; pur. 14.7 million kwh; rev. $455,334.

PRINCEVILLE Mun. Elec. Util., Box 1527, Tarboro, 27886, William H. Best, supt.

RED SPRINGS Water & Light Dept., 217 S. Main St., 28377, 919/843-5241, Craven Pridgen, supt.; 1,550 met.; no gen.; pur. 575,500 kwh; rev. $780,000.

ROBERSONVILLE Water & Light Comm., 27871, 919/795-3511, James S. Simpson, dir. util.; 1,160 met.; no gen.; pur. 19.5 million kwh; rev. $603,068.

ROCKY MOUNT Public Utilities, 147 N. Main St., Box 1180, 27801, 919/977-2111, Carl W. Bateman, Jr., dir. util.; 16,657 met.; no gen.; pur. 554.9 million kwh; rev. $17,296,276.

SCOTLAND NECK, Town of, Box 537, 27874, 919/826-3712, Sidney R. Williams, supt. of util.; 1,615 met.; no. gen.; pur. 23.9 million kwh; rev. $1,153,364.

SELMA, Town of, 100 N. Raeford St., 27576, 919/965-3388, Fred Murray, supt.; 1,783 met.; no gen.; pur. 32.7 million kwh; rev. $1,173,831.

SHARPSBURG Electric Dept., Municipal Bldg., Box 357, 27878, 919/446-9441, Isaac Joyner, Jr., supt. (1923); 605 met.; no gen.; pur. 7.2 million kwh; rev. $327,233.

SHELBY Utilities, City Hall, Box 207, 28150, 704/482-7367, Ralph B. Carlson, dir. util.; 7,048 met.; no gen.; pur. 146.5 million kwh; rev. $4,784,000.

SMITHFIELD Mun. Electric Light System, 107 S. Fourth St., Box 761, 27577, 919/934-2116, H. C. Tarlton, city mgr.; 3,650 met.; no gen.; pur. 72.1 million kwh; rev. $2,660,211.

SOUTHPORT Mun. Electric Light Dept., 201 E. Moore St., 28461, 919/457-6911, Alvin Kornegay, Jr., city mgr. (1910); 1,238 met.; no gen.; pur. 26.5 million kwh; rev. $828,640.

STANTONSBURG Light & Power Dept., Box 8, 27883, 704/238-3608, Roland L. Gardner, supt.; 982 met.; no gen.; pur. 11.5 million kwh; rev. $445,383.

STATESVILLE Light Dept., 227 S. Center St., Box 1111, 28677, 704/873-2121, Clyde E. Bagwell, dir. util. (1889); 9,833 met.; no gen.; pur. 242.7 million kwh; rev. $7,335,986.

TARBORO, Town of, Box 220, 27886, 919/823-8121, Douglas Hathaway, dir. of elec. utils., 4,813 met.; no gen.; pur. 193 million kwh; rev. $9,400,000.

WAKE FOREST Power & Light Dept., Box 352, 27587, 919/556-2024, Andy Frazier, supt.; 1,908 met.; no gen.; pur. 28.7 million kwh; rev. $869,494.

WALSTONBURG Mun. Plant, 27888, 919/753-4834, Ralph G. Beaman, supt.; 128 met.; no gen.; pur. 1.8 million kwh; rev. $73,536.

WASHINGTON Mun. Electric & Water Dept., Box 850, 27889, 919/946-1033, Lloyd Shank, dir. (1905); 10,300 met., no gen.; pur. 198.5 million kwh; rev. $8,898,000.

WAYNESVILLE Mun. Elec. Dept., 28786, 704/456-3515, William L. Ross, dir.; 3,000 met.; no gen.; pur. 43.3 million kwh; rev. $1,479,422.

WILSON Utilities, 112 N. Goldsboro St., Box 10, 27893, 919/237-2121, T. Bruce Boyette, city mgr. (1892); 21,335 met.; no gen.; pur. 622.6 million kwh; rev. $21,136,521.

WINDSOR Electric Dist., Box 508, 27983, 919/794-3121, Lonnie Mizelle, util. dir.; 1,726 met.; no gen.; pur. 27.9 million kwh; rev. $1,099,446.

WINTERVILLE Electric Dept., Box 431, 28590, 919/756-2221, Harvey L. Joyner, supt.; 875 met.; no gen.; pur. 14 million kwh; rev. $571,220.

NORTH DAKOTA

CAVALIER City Light & Power Plant, 58220, E. S. Thompson, mgr.; 564 met.; gen. 888 kw eng.

GRAFTON Light Dept., Box 547, 58237, 701/352-2180, Lester C. Eaton, supt. (1890); 3,220 met.; gen. 4,160 kw eng., pur. 38.9 million kwh; rev. $865,261.

HILLSBORO Electric Light & Water Works, 204 Second Ave., N.E., Box J, 58045, 701/436-4620, David W. Waind, city auditor; 750 met.; no gen.; pur. 14.6 million kwh; rev. $250,000.

HOPE City Light & Power, 58046, 701/945-2461, William West, city engr.; 220 meters; no gen.; pur. 2.8 million kwh; rev. $71,194.

LAKOTA Mun. Utils., 58344, Jack Ritterman, supt.; 477 met.; gen. 625 kw eng.; pur. 10 million kwh; rev. $206,000.

MADDOCK Mun. Light & Power, 58348, 701/438-2252, Bruce Terpening, mayor; (1918); 375 met.; no gen.; pur. 5.2 million kwh; rev. $171,802.

NORTHWOOD Mun. Light & Power Plant, 58267, 701/587-6291, Orville G. Dokken, supt. (1912); 525 met.; gen. 1,813 kw eng.; pur. 8.9 million kwh; rev. $198,468.

PARK RIVER Mun. Light & Water Plant, 340 Prospect Ave., 58270, 701/284-6399, George M. Widme, supt.; 635 met.; gen. 973 kw eng.

SHARON Light & Power Dept., 58277, Martin Jensen, mgr.; 112 met.

STANTON, 58571, 701/545-3202 Phyllis McKay, auditor; 275 met.; no gen.

VALLEY CITY Mun. Utilities, 254 Second Ave., N.E., Box 240, 58072, 701/845-0380, Leif Ravnaas, supt. (1889); 4,512 met.; gen. 3,000 kw eng., 12,470 kwh; pur. 72.8 million kwh; rev. $1,805,525.

OHIO

AMHERST Utilities Dept., 647 Park Ave., 44001, 216/988-4224, George Gordon, supt.; 3,700 met.

ARCADIA Mun. Light & Power, Box 235, 44804, 419/894-6500, Phillip King, supt.; 250 met; no gen.

ARCANUM Water & Light Plant, 104 W. South St., 45304, 513/692-8565 (office), 692-8101 (plant), Michael Clark, supt. (1905); 1,500 met.; gen. 1,300 kw eng.; 93,300 kwh, pur. 16.6 million kwh; rev. $705,410.

BEACH CITY Bd. of Public Affairs, 301 N. Church St., 44608, 216/756-2011, Robert Raff, supt.; (1919); 725 met.; no gen.; pur. 6.2 million kwh; rev. $302,239.

BETHEL Bd. of Public Affairs, 235 W. Plane St., 45106, 513/734-2243, Dennis Barton, dist. supt. (1904); 1,263 met.; no gen.; pur. 15.5 million kwh; rev. $382,110.

BLANCHESTER Bd. of Public Affairs, 105 S. Broadway, 45107, 513/783-2141, Ed Bailey, dir. of utils., (1897); 1,600 met.; no gen.; pur. 35.6 million kwh; rev. $1,151,559.

BLOOMDALE Mun. Light & Power, Box 286, 44817, 419/451-2941, Raymon A. Taylor, supt.; 300 met.; no gen.; pur. 2.6 million kwh; rev. $97,000.

BOWLING GREEN Bd. of Public Affairs, 304 N. Church St., 43402, 419/352-3541, Robert W. Sorgenfrei, dir. util. (1942); 8,794 met.; no gen.; pur. 196.5 million kwh; rev. $6,403,000.

BRADNER Bd. of Public Affairs, Box 516, 43406, 419/288-2773, John Stahl, supt.; 450 met.; no gen.; pur. 5.6 million kwh; rev. $50,000.

BREWSTER Mun. Power & Water, 302 S. Wabash Ave., 44613, 216/767-3710, William Sessor, supt., elec. utils. (1920); 936 met.; no gen.; pur. 15.3 million kwh; rev. $738,440.

BRYAN Mun. Light & Water, E. Edgerton St., 43506, 419/636-4232, ext. 27, E. Leon Daggett, dir. of utils., (1897); 3,824 met.; gen. 23,500 kw, 21,000 kw gas turbine, 2,500 kw eng., 8.2 million kwh; pur. 143.3 million kwh; rev. $6,704,170.

CAREY Bd. of Public Affairs, 127 N. Vance St., 43316, 419/396-6130, James E. Kinsey, supt.; 1,500 met.; no gen.; pur. 63.1 million kwh.

CELINA Mun. Utilities, City Bldg., 426 W. Market St., 45822, 419/586-6464, Thomas Schwartz, safety service dir. (1900); 5,800 met.; gen. 12,500 kw steam; pur. 104.5 million kwh; rev. $3,194,759.

CLEVELAND Div. of Light & Power, 1201 Lakeside Ave., 44114, 216/664-2776, Joseph Panely, Jr., comm. (1910); 45,327 met.; gen. 48,600 kw gas turbine, pur. 568.1 kwh; rev. $25,743,662.

COLUMBIANA Bd. of Public Affairs, 28 W. Friend St., 44408, 216/482-2173, Donald Shaffer, dir.; 2,200 met.; no gen.; pur. 26 million kwh; rev. $420,263.

COLUMBUS Div. of Electricity, 90 W. Broad St., 43215, 614/222-8371, Henry A. Bell, supt. (1910); 8,500 met.; gen. 39,480 kw, 25,000 kw steam; 14,480 kw gas turbine, pur. 345 million kwh; rev. $13,245,045.

CUSTAR Bd. of Pub. Affairs, 23044 Defiance Pike, 43511, 419/669-7385, Virginia Nagel, clerk; 125 met.; no gen.; pur. 1.5 million kwh.

CUYAHOGA FALLS Electric System, 2550 Bailey Rd., 44221, 216/923-9921, C. O. Stout, supt. (1888); 17,957 met.; no gen.; pur. 221.6 million kwh; rev. $9,629,409.

CYGNET Board of Public Affairs, 201 Front St., Box 49, 43413, 419/655-2191, Eldon Martin, mayor (1916); 256 met.; no gen.; pur. 2.5 million kwh; rev. $45,111.

DESHLER Mun. Utilities, City Building, E. Main St., 43516, 419/278-1831, John S. Monteith, supt. (1916); 888 met.; no gen.; pur. 15.6 million kwh; rev. $613,723.

DOVER Mun. Light & Power Dept., E. Third St., 44622, 216/343-7725, ext. 228, Jack W. Marshall, service dir., (1900); 5,500 met.; gen. 34,565 kw, 32,000 kw steam, 2,565 kw eng., 48.6 million kwh; pur. 42.3 million kwh; rev. $3,006,000.

EDGERTON Utilities, N. Crane, 43517, 419/298-2912, Dale Mathys, adm., (1935); 782 met.; no gen.; pur. 12.8 million kwh.

ELDORADO Bd. of Public Affairs, 551 N. Main, 45321, 513/273-2481, Robert Wehrley, supt.; 232 met.; no gen.; pur. 2.4 million kwh.

ELMORE Mun. Electric Light & Water Plant, 308 Clinton St., 43416, 419/862-3454, Merle Harder, supt. (1912); 698 met.; no gen.; pur. 5.7 million kwh; rev. $100,000.

GALION Mun. Light & Power, 700 Primrose, 44833, 419/468-5520, G. W. Butterfield, supt.; 6,401 met.; no gen.; pur. 99.1 million kwh.

GENOA Mun. Light Plant, 607 Washington St., 43430, 419/855-8419, Wayne Smith, gen. supt.; 870 met.; no gen.; pur. 10.3 million kwh; rev. $105,801.

GEORGETOWN Mun. Light Plant, 301 S. Main St., 45121, 513/378-6144, Harold Howser, supt.; 1,552 met.; no gen.; pur. 24.5 million kwh.

GLOUSTER Bd. of Public Affairs, 16 Front St., 45732, 614/767-3497, Delbert Skinner, supt. (1924); 1,151 met.; no gen.; pur. 7.2 million kwh; rev. $151,089.

GRAFTON Utilities, Elec. Div., 1009 Chestnut St., 44044, 216/926-2401 Wilbur Keith, elec. supt., Allen Bartlett, village adm.; 812 met.; no gen; pur. 10.2 million kwh.; rev. $376,586.

GREENWICH Mun. Water & Light Plant, 47 Main St., 44837, 419/752-2441, Jack Earhart, supt.; 609 met.; no gen.; pur. 8.8 million kwh.

HAMERSVILLE Bd. of Public Affairs, 45130, 513/379-3463, Kay Elliott, clerk.

HAMILTON Public Utilities, 20 High St., 45011, 513/868-5907, John C. Engle, util. dir. (1929); 24,528 met.; gen. 135,710 kw; 111,760 kw steam, 23,250 kw gas turbine, 700 kw hydro, 397.1 million kwh, pur. 15.4 million kwh; rev. $14,569,105.

HASKINS Mun. Light & Power, 43525, 419/353-5443, Delton Asmus, mayor; 200 met.; no gen.

HUBBARD Mun. Light & Power System, 13 W. Liberty St., 44425, 216/534-3090, Arthur Magee, mayor; 3,600 met.; no gen.; pur. 32 million kwh; rev. $447,767.

HUDSON Light & Power, Town Hall, 27 E. Main, 44236, 216/650-1052, Wilmer Jacoby, supt.; 3,550 met.; no gen.; pur. 69.4 million kwh.

JACKSON Mun. Electric Light System, 45640, 614/286-2201, Burleigh Oiler, Mayor; 500 met.; no gen.; pur. 36 million kwh.

JACKSON CENTER Mun. Elec. System, 124 E. Pike, 45334, 513/596-5440, Richard Sailor, village adm.; (1920); 555 met.; no gen.; pur. 13.1 million kwh, rev. $505,521.

LAKEVIEW Bd. of Public Affairs, 624 N. Main St., Box 197, 43331, 513/843-2851, A. J. Baker, clerk; 873 met.; no gen.; pur. 7.9 million kwh; rev. $279,833.

LEBANON Div. of Electricity, Dept. of Service, City Bldg., 120 W. South St., 45036, 513/932-3060, Timothy Hansley, city mgr. (1897); 4,000 met.; gen. 20,000 kw, 14,000 kw eng., 6,000 kw gas turbine, 1.1 million kwh; pur. 71 million kwh; rev. $2,724,379.

LODI Power & Light, 108 Ainsworth St., 44254, 216/948-1099, Carl Zoelar, supt. (1942); 1,557 met.; no gen.; pur. 22.7 million kwh.; rev. $1,365,500.

LUCAS Bd. of Public Affairs, Box 36, 44843, 419/892-2178, Nancy L. Banks, clerk; 306 met.; pur. 3.0 million kwh.

MARSHALLVILLE Mun. Utilities Dept., Box 227, 44645, 216/855-4241, Herb Brillhart, supt.; 300 met.; no gen.; pur. 2 million kwh.

MENDON Bd. of Public Affairs, Box 164, 45862, 419/795-4313, Lawrence J. Dicke, supt.; 300 met.; no gen.; pur. 1.7 million kwh; rev. $37,959.

MILAN Mun. Electric Light Dept., 9 E. Church, 44846, 419/499-2631, R. C. Bickley, mayor; 700 met.; no gen.; pur. 16.7 million kwh; rev. $314,481.

MINSTER Light & Water Dept., 29 S. Hanover St., 45865, 419/628-2850, Edward A. Bruns, supt.; 850 met.; no gen.; pur. 42.8 million kwh.

MONROEVILLE Mun. Electric, Monroe St., 44847, 419/465-4149, Joe Gravenhorst, supt. (1906); 785 met.; no gen.; pur. 12.5 million kwh; rev. $501,550.

MONTPELIER Mun. Utilities, 211 N. Jonesville St., 43543, 419/485-3693, John H. Bitler, supt. (1908); 2,000 met.; no gen.; pur. 33.2 million kwh; rev. $1,600,000.

NAPOLEON Utility Bd., 225 W. Riverview, 43545, 419/592-4010, Alan Tandy, city mgr. (1895); 4,462 met.; no gen.; pur. 105.7 million kwh.

NEW BREMEN Light & Water, 17 S. Walnut, Box 27, 45869, 419/629-2827, Clarence B. Art, village adm.; 1,114 met.; no gen.; pur. 28 million kwh.

NEW KNOXVILLE Bd. of Public Affairs, Box 384, 45871, 419/753-2160, Bob Scheblo, village adm.; 390 met.; no gen; pur. 4.4 million kwh.

NEWTON FALLS, City of, 52 E. Church St., 44444, 216/872-7711, Rudy Galgoci, supt.; 2,193 met.; pur. 25.4 million kwh; rev. $1,089,486.

NILES Water & Light, 34 W. State St., 44446, 216/652-2622, Charles W. Burgess, supt.; 11,223 met.; no gen.; pur. 192.8 million kwh.

OAK HARBOR Utility, 146 Church St., 43449, 419/898-3881, Kenley C. Wood, supt.; 1,384 met.; no gen.; pur. 16 million kwh; rev. $689,326.

OBERLIN Mun. Light & Power System, 289 S. Professor St., 44074, 216/775-1531, ext. 212, Robert Cline, actg. dir. (1934); 2,800 met.; gen. 12,873 kw eng., 11.5 million kwh; pur. 55.2 million kwh; rev. $2,262,782.

OHIO CITY Bd. of Public Affairs, 45874, 419/965-2255, Betty Spitler, clerk-treas.

ORRVILLE Dept. of Public Utils., Perry St., Box 126, 44667, 216/682-4976, Robert A. Nichols, dir. util. (1917); 5,160 met.; gen. 64,100 kw, 63,500 kw steam, 600 kw eng., 189.9 million kwh; pur. 27.3 million kwh; rev. $6,790,000.

PAINESVILLE Elec. Power Dept., City Hall, 7 Richmond St., 44077,

216/352-9301, Tom Green, supt., (1888); 9,037 met.; gen. 55,000 kw steam, 133 million kwh; pur. 6.6 million kwh; rev. $5,500,000.

PEMBERVILLE Bd. of Public Affairs, 115 Main St., Box 109, 43450, 419/287-3832, Ernest Wiegman, supt. (1914); 625 met.; no gen.; pur. 6.9 million kwh; rev. $138,455.

PIONEER Bd. of Public Affairs, 106 First St., Box 335, 43554, 419/737-2614, T. E. Williams, supt. (1912); 470 met.; no gen.; pur. 6.8 million kwh.

PIQUA Mun. Power System, 919 S. Main St., 45356, 513/773-1424, H. E. Hastings, dir. (1933); 9,500 met.; gen. 61,600 kw, 41,500 kw steam, 20,100 kw gas turbine, 115.6 million kwh; pur. 76.5 million kwh; rev. $6,746,398.

PLYMOUTH Bd. of Public Affairs, 28 Sandusky St., 44865, 216/687-4331, James Root, admn., 800 met.; no gen.; pur. 5.6 million kwh; rev. $120,000.

PROSPECT Mun. Electric Co., 2505 Gast, Box 186, 43342, 614/494-2115, Leonard G. Ahmay, supt. (1937); 635 met.; no gen.; pur. 6.5 million kwh; rev. $225,581.

REPUBLIC Bd. of Public Affairs, 219 Washington, Box 68, 44867, 419/585-5981, A. J. Kessler, clerk; 305 met.; no gen.; pur. 2.8 million kwh.

RIPLEY Bd. of Public Affairs, 19 N. Third, 45167, 513/392-4377, Carl Judy, supt.; 2,900 met.; no gen.; pur. 10.6 million kwh.

ST. CLAIRSVILLE Mun. Utilities, 100 Market, 43950, 614/695-1410, Dannis Banash, supt., 2,413 met.; no gen; pur. 33.2 million kwh.

ST. MARYS Mun. Power & Light, 101 E. Spring St., Box 129, 45885, 419/394-3303, Kenneth L. Hegemann, service and safety dir. (1890); 3,500 met.; gen. 10,750 kw, 10,000 kw steam, 750 kw gas turbine, 35.3 million kwh; pur. 63.7 million kwh; rev. $2,950,000.

SEVILLE Mun. Light & Power System, 40 W. Main St., 44273, 216/769-2458, Milton L. Leohr, supt.; 958 met.; no gen.; pur. 14.9 million kwh; rev. $112,310.

SHELBY Dept. of Utilities, 23 E. Main St., Box 311, 44875, 419/342-4085, David Burford, util. sec. (1892); 4,310 met.; gen. 40,500 kw, 37,500 kw steam, 3,000 kw eng., 80.6 million kwh; pur. none; rev. $1,995,006.

SHILOH Bd. of Public Affairs, Box 242, 44878, 419/896-2011, Robert Adams, supt.; 279 met.; no gen.; pur. 2.7 million kwh.

SOUTH VIENNA Board of Public Affairs, 16 N. Urbana St. (Town Hall) 45369, 513/568-4658, John W. Kennedy, Board of Public Affairs; 186 met.; no gen.; pur. 2.7 million kwh; rev. $121,288.

SYCAMORE Light and Water Dept., 44882, 419/927-6677, Howard Feffel, supt.; 600 met.; no gen.; pur. 1 million kwh.

TIPP CITY Mun. Utilities, 3 E. Main St., 45371, 513/667-6305, Dan Trupp, elec. supt., (1897); 2,600 met.; gen. 2,480 kw eng.; pur. 61.3 million kwh; rev. $2,700,000.

TONTOGANY Bd. of Public Affairs, 43565, 419/823-4233, Ralph Wires, pres., 190 met.; no gen.; pur. 0.2 million kwh.

VERSAILLES Bd. of Trustees of Public Affairs, 6 S. Center St., 45380, 513/526-4191, Ramon L. Nickol, supt. (1901); 1,350 met.; no gen.; pur. 23.5 million kwh.; rev. $868,737.

WADSWORTH Light & Power Dept., 145 High St., 44281, 216/334-1581, Peter A. Giacomo, dist. supt. (1903); 7,668 met.; no gen.; pur. 134.7 million kwh; rev. $4,838,037.

WAPAKONETA Mun. Light Dept., 102 Perry St., 45895, 419/738-7713, Ted Gilroy, service dir.; 4,000 met.; no gen.; pur. 98.7 million kwh; rev. $1,320,000.

WAYNESFIELD Bd. of Public Affairs, 45896, 419/568-4991, Lon Zimmerman, chair.; 350 met.; no gen.; pur. 4.8 million kwh.

WELLINGTON Mun. Utilities, Town Hall, Willard Square, 44090, 216/647-3827, Robert A. Dupee, dir. (1908); 1,900 met.; no gen.; pur. 40.4 million kwh; rev. $2,000,000.

WESTERVILLE, City of, Electric Div., 139 E. Broadway, 43081, 614/890-8540, Harold M. Evans, supt. (1898); 8,100 met.; no gen.; pur. 166.2 million kwh; rev. $7,169,764.

WHARTON Bd. of Trustees of Public Affairs, Box 266, 43359, 419/458-2121, Calvin J. Peever, chair.; 190 met.; no gen.; pur. 1.6 million kwh; rev. $29,353.

WOODSFIELD Bd. of Public Affairs, 203 Roy St., 43793, 614/472-3841, Ellis Smithberger, supt.; 1,200 met.

WOODVILLE Bd. of Public Affairs, 212 Bridge St., 43469, 419/849-3031, Ted Bowen, adm.; 838 met.; no gen.; pur. 8.0 million kwh.

YELLOW SPRINGS Mun., 314 Dayton St., Box 226, 45387, 513/767-7202, Kent Bristol, village mgr.; 1,733 met.; no gen.; pur. 32.4 million kwh; rev. $1,200,000.

OKLAHOMA

ALTUS Mun. Power, Box 914, 73521, 405/477-1950, Ron Bourbeau, city adm. (1929); 7,577 met.; no gen.; pur. 112.9 million kwh; rev. $4,426,820.

AMORITA Light & Power, City Hall, 73719, 405/474-2623, Jerry R. Blevins, Mayor; 50 met.; no gen.; pur. 300,000 kwh.

ANADARKO Mun. Power and Light, Box 647, 73005, 405/247-2481, Royce Hunter, mgr.; 3,200 met.; gen. 7,740 kw eng., 22.6 million kwh; pur. 1.7 million kwh; rev. $529,368.

BLACKWELL, City of, Box 350, 74631, 405/363-3282, Drake Rice, city mgr. (1913); 3,900 met.; pur. 82.2 million kwh; rev. $2,802,872.

BRAMAN Electric Dept., City Hall, Box 48, 74632, 405/385-6331, William Munhall, elec supt.; 200 met.; no gen.; pur. 1.5 million kwh; rev. $38,698.

BURLINGTON, Town of, P.O. Box 216, 73722, 405/431-2550, C. L. Fullington, Mgr.

BYRON, City of, 73723.; no gen.

CARMEN, P.O. Box 98, 73726, 405/987-2321, Loren H. Cramer, elec. supt.

CHELSEA Mun. Electric Light Plant, 600 Walnut St., P.O. Box 48, 74016, 918/789-2315, C. C. Drumheller, elec. sup.; 800 met.; no gen.; pur. 9 million kwh.

CHEROKEE Mun. Light & Water Dept., City Hall, Box 288, 73728, 405/596-3326; Don Groves, city mgr.; 1,355 met.; gen. 5,560 kw eng.; rev. $328,574.

CLAREMORE Mun. Light & Water Dept., 104 S. Muskogee, P.O. Box 249, 74017, 918/341-1325, Don Gilbert, supt.; 5,826 met.; no gen.; pur. 80 million kwh; rev. $1,366,836.

COLLINSVILLE Electric Dept., 106 N. 12th, Box A, 74021, 918/371-2811, John P. Phillips, mayor; 1,300 met.; no gen.

COMANCHE, City of, 115 N. Second, 73529, 405/439-8832, Dan Benson, actg. city mgr. (1912); 1,000 met.; no gen.; pur. 12.7 million kwh; rev. $350,674.

COPAN Light, Water & Gas System, Box 219, 74022, 918/532-4114, Steve Shedd, elec. supt. (1936); 420 met.; no gen.; pur. 2.6 million kwh; rev. $145,349.

CORDELL Light & Water Dept., 101 E. Main St., Box 417, 73632, 405/832-3825, Danny Lenaburg, elec. supt.; 1,400 met.; no gen.; pur. 16 million kwh.

CUSHING Mun. Light & Power, City Hall, Box 11, 74023, 918/225-2394, R. G. Annis, Jr., city mgr. (1937); 3,991 met.; gen. 18,285 kw eng.; 60 million kwh; pur. 4.5 million kwh; rev. $1,338,775.

DUNCAN Power & Light Dept., City Hall, Box 969, 73533, 405/252-0250, Don Howland, mgr. (1921); 5,100 met.; no gen.; pur. 56.4 million kwh.

EDMOND Electric Dept., 23 E. First St., Box 1260, 73034, 405/348-8830, L. L. White, supt.; 9,474 met.; no gen.; pur. 191.6 million kwh; rev. $5,664,685.

ELDORADO Light Dept., 107 S. Fourth, P.O. Box 190, 73537, 405/633-2245, Harold Conwell, supt.

FAIRVIEW, City of, Box 386, 73737, 405/227-4416, Dixie J. Blackledge, mgr.; 1,500 met.; gen. 2,300 kw., 24,500 kwh; pur. 26.2 million kwh; rev. $948,465.

FORT SUPPLY, P.O. Box 156, 73841, 405/766-3211, Joe Brady, power supt.

FREDERICK Electric Dept., 124 S. Main, Box 399, 73542, 405/335-2714, Ray M. Duffy, supt. (1917); 2,772 met.; no gen.; pur. 41.1 million kwh; rev. $1,627,835.

GEARY Mun. Light & Water Dept., P.O. Box 125, 73040, 405/884-5466, Chuck Johnson, elec. supt.; no gen.

GOLTRY Mun. Lighting, Box 236, 73739, 405/496-2441, J. Gary Voss, elec. supt.; 160 met.; no gen.; pur. 3 million kwh; rev. $40,700.

GRAND RIVER DAM AUTHORITY, Drawer G, Vinita, Okla., 74301, 918/256-5545, Dale E. Sims, gen. mgr. (1935); 200 met.; gen. 508,400 kw, 458,400 kw hydro, 50,000 kw steam, 934.3 million kwh; pur. 2,804.6 million kwh; rev. $54,023,673.

GRANITE, Town of, Box 116, 73547, 405/535-2116, E. J. Hahn, city clerk, utility supt. (1920); 550 met.; no gen.; pur. 5.2 million kwh; rev. $163,394.

HOMINY Electric Dept., 314 W. Third St., Box 219, 74035, 918/885-2164, Betty Helm, mgr.; 1,383 met.; no gen.; rev. $276,890.

KAW CITY Electric Dept., 900 Morgan Dr., E., Box 26, 74641, 405/269-2525, Gene Jackson, elec. supt.; 100 met.; no gen.

KINGFISHER, City of, 301 N. Main, 73750, 405/375-3705, Vernie Snow, mgr. (1900); 2,000 met.; gen. 11,200 kw, 2,500 kw steam, 8,700 kw eng., 18.6 million kwh; pur. none; rev. $565,122.

LAVERNE Mun. Electric Light Plant, P.O. Box 4301, 73848, 405/921-5121, Jay D. McCoy, elec. supt.; 770 met.; gen. 1,100 kw eng.

LEXINGTON Electric Dept., Drawer D, 73051, 405/527-3179, Chuck Tiller, city electn. (1951); 900 met.; no gen.; pur. 27,000 kwh; rev. $253,000.

LINDSAY Electric Dept., 308 S. W. Second, Box 708, 73052, 405/756-4900, (1915); Rick

OKLAHOMA
(continued)

McKinney, city mgr; 1,470 met.; gen. 9,974 kw eng., 18.8 million kwh; pur. none; rev. $412,770.

MANCHESTER Light & Power Dept., P.O. Box 5, 73758, 405/694-2340, Raymond Hess, elec. supt.

MANGUM Electric Dept., 201 N. Oklahoma, 73554, 405/782-2250, Phillip Paxton, mgr.; 2,000 met.; gen. 7,600 kw eng.; pur. none; rev. $406,674.

MANITOU Light Dept., Box 8, 73555, Calvin Maddox, elec. supt.

MANNFORD Electric Dept., Box 327, 74044, 918/865-4314, W. P. Adkins, pub. works dir.; 405 met.; no gen.; rev. $110,911.

MARLOW Light & Water Dept., 318 W. Main St., Box 113, 73055, 405/658-5401, Harold Staats, elec. supt.; 1,735 met.; gen. 5,642 kw eng., rev. $308,673.

MIAMI, City of, Utility Dept., 129 Fifth Ave., N.W., Box 309, 74354, 918/542-8478, John C. Woody, gen. mgr. (1910); 6,200 met.; no gen.; pur. 104 million kwh; rev. $3,703,295.

MOORELAND Light & Power Dept., Box 157, 73852, 405/994-5925, Dean Hensley, supt.; 600 met.; no gen.; pur. 6.6 million kwh.

NEWKIRK Mun. Utilities, E. Tenth St., Box 469, 74647, 405/362-2117, Gene F. Leavitt, city mgr. (1918); 1,268 met.; gen. 4,400 kw eng., 12.3 million kwh; pur. none; rev. $462,186.

OKEENE Light & Water Dept., 213 N. Main St., P.O. Drawer F, 73763, 405/822-3197, Don Rauh, supt.; 600 met.; gen. 3,000 kw eng.; rev. $207,312.

OLUSTEE Light System, 4th St., 73560, 405/648-2288, Kenneth Reynolds, elec. supt.; gen.

ORLANDO Light System, P.O. Box 27, 73073, 405/455-3825, Alta Branen, mayor; no gen.

PAWHUSKA Light & Water Plant, 1208 E. Tenth St., Box 539, 74056, 918/287-3576, Morgan L. Hayes, city mgr. (1907); 2,500 met.; gen. 8,700 kw eng., 4.2 million kwh; pur. 29.8 million kwh; rev. $950,000.

PAWNEE Mun. Light & Water Dept. 614 Kansas St., Box 130, 74058, 918/762-2658, Tommy Creager, elec. supt.; 1,200 met.; no gen.; pur. 13 million kwh; rev. $261,476.

PERRY Water & Light Dept., Box 111, 73077, 405/336-4241, Charles J. Bezdicek, supt. (1903); 2,900 met.; gen. 5,050 kw eng., 11.5 million kwh; pur. 24.9 million kwh; rev. $665,920.

PONCA CITY Municipal Light Dept., 1400 N. Union, Box 1450, 74601, 405/765-6653, Charles L. Silvy, dir., pub. utils. (1914); 16,000 met.; gen. 87,000 kw, 26,000 kw eng., 61,000 kw steam, 127.4 million kwh; pur. 88.4 million kwh; rev. $9,409,527.

POND CREEK Water & Light Dept., Box 45, 73766, 405/532-4915, Richard Dillion, elec. supt.; 465 met.; no gen.; pur. 4.3 million kwh; rev. $114,930.

PRAGUE Mun. Utilities, Box 648, 74864, 405/567-2239, Irl E. Wall, Jr., mgr. (1902); 965 met.; no gen.; pur. 3.5 million kwh; rev. $250,000.

PRYOR Mun. Utility Bd., P.O. Box 1167, 74361, 918/825-2100, Robert Shafer, supt. of util. (1951); 3,750 met.; no gen.; pur. 63 million kwh; rev. $1,800,000.

PURCELL Mun. Water & Light Dept., 322 W. Brule, Box 71, 73080. 405/527-6561, Nolan Combs, mgr.; 4,600 met.; gen. 1,390 kw eng.; rev. $455,781.

RYAN Mun. Light & Water Plant, P.O. Box 489, 73565, 405/757-2406, George W. Hicks, mgr.

SALLISAW Light & Power Dept., 111 N. Elm, Box C, 74955, 918/775-6241, Lloyd Haskins, mgr.; 2,400 met.; no gen.; pur. 53 million kwh.

SKIATOOK Electric Dept., City Hall, Box 399, 74070, 918/396-2797, Monte Gondles, Jr., adm. asst.; no gen.; pur. 21.6 million kwh.

SOUTH COFFEYVILLE Mun. Electric System, P.O. Drawer C, 74072, 918/255-6045, Carl Yates, mayor; 300 met.; no gen.; pur. 1.5 million kwh.

SPIRO Mun. Light & Water Dept., 131 S. Main St., 74959; 918/962-2470, Stearl Nelson, mayor; 1,000 met.; no gen.

STILLWATER Electric Dept., Box 631, 74074, 405/372-0025, Karl Stadler, dir. utils. (1900); 13,500 met.; gen. 24,000 kw steam, 23.2 million kwh; pur. 223.5 million kwh; rev. $9,018,949.

STILWELL Utility Dept., Box 840, 74960, 918/774-2154, Page G. Arnall, supt. util.; 1,247 met.; no gen.; rev. $995,155.

STROUD Water & Light Dept., Box K, 74079, 918/968-2890, Bruce Stone, mgr.; 1,408 met.; no gen.; pur. 10.9 million kwh; rev. $268,241.

TAHLEQUAH City Light & Water Dept., 111 S. Cherokee, 918/456-2564, Marvin J. Hicks, dir., public works; 3,175 met.; no gen.; rev. $910,198.

TECUMSEH Util. Authority, 114 N. Broadway, 74873, 405/598-2188, Charles Martin, city mgr.; 1,750 met.; no gen.; pur. 20 million kwh; rev. $724,131.

TONKAWA Mun. Power Plant, 117 S. Seventh, Box 467, 74653, 405/628-2508, J. E. Ditmore, mgr. (1925); 1,617 met.; gen. 5,500 kw eng., 12.5 million kwh; pur. 6 million kwh; rev. $387,030.

WAGONER Water & Light Plant, 231 Church St., Box 406, 74467, 918/485-2554, Ed Caldwell, mgr.; 3,100 met.; no gen.; pur. 39 million kwh.

WALTERS Mun. Electric Light & Water Dept., 129 E. Colorado St., Box 485, 73572, 405/875-3337, Buddy Veltema, city mgr. (1925); 1,375 met.; no gen.; pur. 14.4 million kwh; rev. $366,051.

WATONGA Water & Light System, Weigel St., Box 564, 73772, 405/623-7353, Kenneth Marshall, elec. supt.; 1,825 met.; no gen.; rev. $491,125.

WAYNOKA Light & Power, 201 E. Cecil St., 73860, 405/824-2261, George Glover, elec. supt.; 848 met.; no gen.; pur. 7.5 million kwh.

WELEETKA, 74880. **(Municipal distribution system leased to Public Service Co. of Oklahoma.)**

WETUMKA Light Dept., 202 N. Main, 74883, 405/452-3153, Carl Sanders, supt.; 800 met.; no gen.; pur. 4 million kwh; rev. $100,084.

WYNNEWOOD Water & Light Dept., 207 W. Kerr Blvd., Box 176, 73098, 405/665-4141; Ralph Nelms, mgr.; 1,228 met.; no gen.; pur. 12.5 million kwh; rev. $540,263.

YALE Mun. Light Dept., 209 N. Main, 74085, 918/387-2121, Clarence Embry, mgr.; 750 met.; no gen.; pur. 4.3 million kwh; rev. $113,343.

OREGON

ASHLAND, City of, 20 E. Main St., 97520, 503/482-3211, Brian L. Almquist, city admin. (1908); 6,200 met.; no gen.; pur. 125.6 million kwh; rev. $2,273,000.

BANDON, City of, City Hall, Box 67, 97411, 503/347-3606, William M. Donahue, mgr. (1921); 1,985 met.; no gen.; pur. 49.5 million kwh; rev. $663,182.

CANBY Utility Bd., 154 N.W. First Ave., Box 470, 97013, 503/266-1156, Fred W. Egger, mgr. (1922); 3,188 met.; no gen.; pur. 90 million kwh; rev. $1,267,276.

CASCADE LOCKS, City of, City Hall, Box 308, 97014, 503/374-8510, Clayton H. Schmitt, city mgr. (1939); 685 met.; no gen.; pur. 29.7 million kwh; rev. $342,390.

CENTRAL LINCOLN PEOPLE'S UTILITY DISTRICT, 255 S. W. Coast Highway, Newport, Ore., 97365, 503/265-5335, H. P. Sudduth, gen. mgr. (1940); 23,730 met.; no gen.; pur. 1,193.2 million kwh; rev. $12,932,347.

CLATSKANIE PEOPLE'S UTILITY DISTRICT, Box 216, Clatskanie, Ore., 97016, 503/728-2163, Daniel Westlind, mgr. (1943); 2,812 met.; no gen.; pur. 519.8 million kwh; rev. $216,267.

COLUMBIA RIVER PEOPLE'S UTILITY DISTRICT, Box 1193, St. Helens, 97051, 503/397-6568 or -3118, Steve Spinden, pres.; R. Tarbell, sec.-treas. **(authorized in 1980 to issue revenue bonds; not yet operating).**

DRAIN Electric Dept., Box 158, 97435, 503/836-2417, Douglas Ohmart, bus. mgr. (1940); 584 met.; no gen.; pur. 31.2 million kwh.

EMERALD PEOPLE'S UTILITY DISTRICT, 84899 Tillicum Ave., Pleasant Hill, 97401, 503/746-1583, Enid Smith, adm. dir. **(authorized in 1978; not yet operating).**

EUGENE Water & Electric Bd., 500 E. Fourth Ave., 97401, 503/484-2411, Keith Parks, gen. mgr. (1911); 59,866 met.; gen. 139,500 kw, 111,500 kw hydro, 28,000 kw steam, 587.7 million kwh; pur. 1,943.3 million kwh; rev. $34,917,000.

FOREST GROVE, City of, Box 326, 97116, 503/357-7151, Doug Sleeth, dir., light and power dept., (1895); 5,598 met.; no gen.; pur. 151.6 million kwh; rev. $1,856,805.

McMINNVILLE Water & Light Dept., 130 N. Baker St., Box 58, 97128, 503/472-6158, Alan H. Jones, gen. mgr. (1889); 7,271 met.; no gen.; pur. 290.4 million kwh; rev. $2,678,489.

MILTON-FREEWATER City Light & Power, 722 S. Main, Box 6, 97862, 503/938-5533, George N. McRae, elec. supt. (1888); 3,905 met.; no gen.; pur. 110.8 million kwh; rev. $1,083,852.

MONMOUTH Electric Dept., 151 W. Main St., 97361, 503/838-3526, Ronald Peterson, city mgr. (1941); 2,430 met.; no gen.; pur. 61 million kwh; rev. $734,622.

NORTHERN WASCO COUNTY PEOPLE'S UTILITY DISTRICT, 121 E. Third St., Box 621, The Dalles, Ore., 97058, 503/296-2227, O. W. Kortge, mgr. (1948); 7,909 met.; no gen.; pur. 202 million kwh; rev. $2,539,719.

SPRINGFIELD Utility Board, 250 N. A St., Box 300, 97477, 503/746-8451, Steve L. Loveland, gen. mgr. (1950); 19,957 met.; no gen.; pur. 720.4 million kwh; rev. $9,833,652.

THE DALLES Public Utility District, 121 E. 2nd St., Box 621, The Dalles, Ore., 97058, 503/296-2227, O. W. Kortge, mgr.

(1939), 7,940 met.; pur. 210 million kwh; rev. $3,161,695.

TILLAMOOK PEOPLE'S UTILITY DISTRICT, 1115 Pacific Ave., Box 433, Tillamook, Ore., 97141, 503/842-2535, Jack H. Madison, mgr. (1946); 14,400 met.; no gen.; pur. 379.8 million kwh; rev. $4,985,000.

PENNSYLVANIA

BERLIN Light Dept., 700 North St., 15530, Fred M. Elliott, borough sec.; 763 met.; no gen.; pur. 9 million kwh; rev. $260,000.

BLAKELY Borough Mun. Light Plant, Main St., Peckville, Pa., 18452, Robert Evans, borough sec.; 3,046 met.; no gen.; pur. 13 million kwh; rev. $781,000.

CATAWISSA Mun. Light Plant, Box 44, 17820, Judith Krum, borough sec.; 726 met.; no gen.; pur. 9 million kwh; rev. $282,000.

CHAMBERSBURG Electric Dept., 100 S. Second St., 17201, 717/264-5151, Julio D. Lecuona, mgr. of utils., (1889); 9,217 met.; gen. 14,000 kw, 4,000 kw eng; 10,000 kw steam; 200,060 kwh; pur. 150.3 million kwh; rev. $5,658,774.

DUNCANNON Light & Power, 115 Hickory St., Box 9, 17020, 717/834-4311, Thomas Evans, borough mgr.; 800 met.; no gen.; pur. 6.3 million kwh; rev. $252,300.

EAST CONEMAUGH Mun. Light Plant, 355 First St., 15909, 814/539-0193, Mary Briggs, borough sec.; 916 met.; no gen.; pur. 5 million kwh; rev. $179,000.

ELLWOOD CITY Mun. Elec. Dept., 525 Lawrence Ave., 16117, 412/758-5576, Joseph V. Santangelo, engr/mgr. (1901); 4,281 met.; no gen.; pur. 44.9 million kwh; rev. $1,724,661.

EPHRATA, Borough of, Electric Dept., 114 E. Main St., 17522, 717/733-1277, Carl W. Fuehrer, mgr. (1902); 5,050 met.; no gen.; pur. 84 million kwh; rev. $3,450,000.

GIRARD Mun. Light Plant, Box 146, 16417, 714/774-3012, R. M. Hanson, supt.; 1,020 met.; gen. 4,139 kw eng., 12 million kwh; pur. 3 million kwh; rev. $488,000.

GOLDSBORO Utility Dept., Etters, Pa., 17319, Lee Fishol, borough sec.; 218 met.; no gen.; pur. 2 million kwh; rev. $61,000.

GROVE CITY Mun. Electric, 315 Park St., 16127, 412/458-7070, C. W. Allen, supvr., (1908); 2,700 met.; no gen.; pur. 37 million kwh; rev. $1,740,125.

HATFIELD Mun. Electric Plant, Broad and Cherry Sts., Box 190, 19440, 215/855-2087, David L. Leidy, borough sec.; 1,071 met.; gen. 2,685 kw eng., 6 million kwh; pur. 7 million kwh; rev. $553,000.

HOOVERSVILLE, Borough of, 15936, Eileen P. Granoas, borough sec.; 397 met.; no gen.; pur. 2 million kwh; rev. $92,000.

KUTZTOWN Mun. Light & Power, 211-213 W. Main St., 19530, 215/683-6131, Carl H. Bortz, borough sec.; 1,814 met.; no gen.; pur. 31 million kwh; rev. $1,158,000.

LANSDALE Mun. Power Plant, 421 W. Main St., 19446, 215/368-1691, Edward W. Olander, supt. (1902); 6,793 met.; no gen.; pur. 100.5 million kwh; rev. $2,991,426.

LEHIGHTON Light and Power Dept., Municipal Bldg., 18235, 215/377-4004, Mortimer L. Smedley, Jr., borough mgr. (1940); 2,750 met.; no gen.; pur. 32.8 million kwh; rev. $1,270,896.

LEWISBERRY, Borough of, 17339, William Keener, borough sec.; 125 met.; no gen.; pur. 1 million kwh; rev. $34,000.

MIDDLETOWN Light Plant, 60 W. Emaus St., 17057, 717/944-4686, Paul H. Bradtmiller, mgr.; 3,573 met.; no gen.; pur. 50.7 million kwh rev. $1,161,563.

MIFFLINBURG Light Dept., 333 Chestnut St., 17844, 717/966-0413, Steven Dodge, borough sec. (1925); 1,510 met.; no gen.; pur. 20 million kwh; rev. $783,000.

MONT ALTO Mun. Electric Dept., 17237, Robert T. Shank, borough sec.; 439 met.; no gen.; pur. 2 million kwh; rev. $94,000.

NEW WILMINGTON, Borough of, 140 W. Neshannock Ave., 16142, 412/946-8167, Edward Garrett, borough supt.; 706 met.; no gen.; pur. 10 million kwh; rev. $366,123.

OLYPHANT Borough Electric Plant, 18447, Joseph McNamara, borough sec.; 1,976 met.; no gen.; pur. 17 million kwh; rev. $522,000.

PERKASIE Borough Electric Light Dept., 607 Chestnut St., Box 275, 18944, 215/257-5065, Kenneth B. Wenhold, supt. (1900); 2,229 met.; no gen.; pur. 29.4 million kwh; rev. $1,123,000.

PITCAIRN Mun. Electric Light Plant, 320 Center Ave., 15140, 412/372-3116, George H. Myers, mgr.; 1,878 met.; no gen.; pur. 9 million kwh; rev. $395,000.

QUAKERTOWN Mun. Electric Dept., 330 W. Broad St., 18951, 215/536-5001, Nicolas Luca, mgr.; 3,574 met.; no gen.; pur. 62 million kwh; rev. $1,965,000.

ROYALTON Elec. Light Dept., Burd and Dock Sts., Royalton, Middletown, Pa., 17057, 717/944-4831, Ethel M. Bryan, borough sec.; 352 met.; no gen.; pur. 1.9 million kwh; rev. $116,400.

ST. CLAIR Elec. Light Dept., Borough Hall, 39 N. Second St., 17970, 717/429-0640, John Gregor, supt. (1920); 2,034 met.; no gen.; pur. 9 million kwh; rev. $421,000.

SCHUYLKILL HAVEN Borough Utilities, 39 Dock St., 17972, 717/385-2841, Charles R. Feindler, borough mgr.; 2,745 met.; no gen.; pur. 38.5 million kwh; rev. $1,337,063.

SMETHPORT Electric Dept., 412 Water St., 16749, Robert E. Miller, supt.; 1,105 met.; no gen.; pur. 8.9 million kwh; rev. $501,842.

SUMMERHILL Mun. Light Plant, 15958, Robert Casti, borough sec.; 256 met.; no gen.; pur. 2 million kwh; rev. $171,000.

WAMPUM Borough Electric Dept., Church St., Box 65, 16157, 412/535-8241, Albert J. Pitzer, maintenance head; 377 met.; no gen.; pur. 2.6 million kwh; rev. $104,000.

WATSONTOWN Borough Electric Dept., Fourth and Main Sts., Box 273, 17777, 717/538-1000, Barbara Hyde, borough sec.; 1,045 met.; no gen.; pur. 10 million kwh; rev. $332,000.

WEATHERLY Borough Electric Dept., 10 Wilbur St., 18255, 717/427-8640, Beverly E. Knepper, borough mgr.; 1,025 met.; no gen.; pur. 24.3 million kwh; rev. $834,779.

ZELIENOPLE Mun. Electric Dept., 111 W. New Castle St., 16063, 412/452-7260, Charles M. Mick, supt.; 1,550 met.; no gen.; pur. 14.9 million kwh; rev. $759,652.

RHODE ISLAND

PASCOAG FIRE DISTRICT, Elec. Dept., 33 S. Main St., Pascoag, R.I., 02859, 401/568-6222, David I. Sweetland, gen. mgr. (1889); 2,843 met.; no gen.; pur. 21.7 million kwh; rev. $1,076,155.

SOUTH CAROLINA

ABBEVILLE Water & Electric Plant, Box 639, 29620, 803/459-5058, S. P. Stribling, Jr., dir. (1905); 3,000 met.; gen. 4,650 kw, 3,250 kw hydro, 1,400 kw eng., 11 million kwh; pur. 32 million kwh; rev. $1,500,000.

BAMBERG Bd. of Public Works, Box 300, 29003, 803/245-5128, James B. Roberts, supt. public works, (1905); 1,450 met.; no gen.; pur. 34.2 million kwh; rev. $1,242,929.

BENNETTSVILLE Mun. Utilities, Box 1036, 29512, 803/479-4661, H. O. Pettit, utils. coordinator (1903); 4,000 met.; no gen.; pur. 48.5 million kwh; rev. $918,329.

CAMDEN Mun. Utilities, City Hall, 1000 Lyttleton St., 29020, 803/432-2421, Terry L. Williams, dir. util. (1947); 7,134 met.; no gen.; pur. 108.4 million kwh; rev. $4,096,323.

CLINTON Water & Light Plant, Box 644, 29325, 803/833-0504, H. L. Martin, supt.; 3,500 met.; no gen.; pur. 54.4 million kwh; rev. $762,261.

DUE WEST Comm. of Public Works, Box 128, 29639, 803/379-2385, C. H. Hawthorne, supt.; 336 met.; no gen.; rev. $68,686.

EASLEY Combined Utility System, Box 605, 29640, 803/859-4013, Richard S. Hale, mgr. (1910); 7,518 met.; no gen.; pur. 142.4 million kwh; rev. $4,535,259.

GAFFNEY Bd. of Public Works, 210 E. Frederick St., 29340, 803/487-7171, Dick Crater, Jr., mgr. (1907); 6,000 met.; no gen.; pur. 104 million kwh; rev. $3,625,761.

GEORGETOWN Light & Water Dept., City Hall, Box 574, 29440, 803/546-5632, W. L. Hewitt, util. mgr.; 4,000 met.; no gen.; pur. 52 million kwh; rev. $725,000.

GREENWOOD Comm. of Public Works, Box 549, 29646, 803/223-8571, Clarence E. Grubb, mgr. (1896); 9,900 met.; no gen.; pur. 160.4 million kwh; rev. $4,804,914.

GREER Comm. of Public Works, 201 W. Poinsett St., Box 216, 29651, 803/877-3381, Kennett Smith, mgr. (1914); 6,489 met.; no gen.; pur. 93.7 million kwh; rev. $2,111,887.

LAURENS Comm. of Public Works, Box 349, 29360, 803/984-2576, Sam R. Wallace, mgr. (1922); 4,827 met.; no gen.; pur. 1.5 million kwh; rev. $2,452,224.

McCORMICK Comm. of Public Works, Box 656, 29835, 803/465-2224, J. Eakin Cochran, supt. (1926); 860 met.; no gen.; pur. 13.7 million kwh; rev. $652,186.

NEWBERRY, City of, 3 Boyce St., 29108, 803/276-0471, Steve D. Reeves, Jr., Utils. dir., 4,160 met.

ORANGEBURG Dept. of Public Utilities, 195 Russell S.W., 29115, 803/534-2821, Ted M. Johnson, Jr., mgr., (1890); 20,175 met.; no gen.; pur. 406.5 million kwh; rev. $14,549,449.

PROSPERITY, Town of, McNeary St., Box 36, 29127, 803/364-2616, J. Walter Hamm, mayor (1920); 398 met.; no gen.

ROCK HILL Utilities, 120 Hampton St., Box 11706, 29730, 803/328-6171,C. A. Owen, dir. (1910); 15,390 met.; no gen.; rev. $11,123,000.

SENECA Light & Water Plant, N. First St., Box 773, 29678, 803/882-8359, H. Jerry Balding, supt. (1920); 4,100 met.; no gen.; pur. 68 million kwh; rev. $2,050,000.

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY (Santee Cooper), 223 N. Live Oak Drive, Moncks Corner, 29461, 803/899-2121, Clarence S. Gramling, sr. v. pres., sys. oper., (1934); 48,113 met.; gen. 1,913,195 kw, 1,553,800 kw steam, 134,535 kw hydro, 224,860 kw gas turbine, 6,634.1 million kwh; pur. 521.1 million kwh; rev. $156,495,770.

UNION City Utility Dept., Drawer K, 29379, 803/427-6282, T. D. Sherbert, Jr., dir. (1896); 6,134 met.; no gen.; pur. 81.6 million kwh; rev. $2,847,665.

WESTMINSTER Comm. of Public Works, Box 216, 29693, 803/647-5961, Sam Stribling, supt.; no gen.

WINNSBORO Pub. Utilities, W. Washington St., Box 209, 29180, 803/635-4041, John C. Shirley, supt., 2,442 met.; no gen.; pur. 39.7 million kwh; rev. $1,690,197.

SOUTH DAKOTA

ARLINGTON Mun. Light Plant, 57212, Larry Nelson, supt.; 496 met ; gen. 800 kw eng.

AURORA Mun. Electric System, 57002, 605/693-3883, Bennie Knutson, town chair. (1968); 115 met.; no gen.; pur. 1 million kwh; rev. 27,063.

BADGER Elec. Light Dept., 57214, 605/983-5385, Myron Anderson pres.

BERESFORD, City of, 311 N. Third St., 57004, 605/763-5501, Terry L. Peters, supt. (1950); 1,070 met.; gen. 1,000 kw eng.; pur. 14.9 million kwh; rev. $490,000.

BIG STONE CITY Mun. Elec. Dept., 57216, 605/862-8128, Roger Hegge, town chair.

BROOKINGS Mun. Electric, 525 Western Ave., 57006, 605/692-6325, Andy Jensen, supt. of elec. (1887); 5,000 met.; pur. 120 million kwh; rev. $2,722,118.

BRYANT City Power & Light, 57221, 605/625-5221, Harry Roberts, supt.; 436 met.; gen. 200 kw eng.; pur. 1.6 million kwh.

BURKE Mun. Light & Power Plant, Box 312, 57523, 605/775-2692, Richard N. Bailey, supt. (1906); 405 met.; no gen.; pur. 5 million kwh; rev. $110,714.

COLMAN, City of, 57017, Donald Hilmoe, town pres. (1964); no gen.

ELK POINT, City of, Box 280, 57025, 605/356-2631, Robert L. Eslick, supt. (1918); 680 met.; gen. 1,350 kw; pur. 11.6 million kwh; rev. $310,193.

ESTELLINE Mun. Light & Power Plant, 57234, 605/873-3531, Jack Hemmelrick, supt.; 300 met.; gen. 614 kw eng.; pur. 1.9 million kwh.

FAITH Mun. Light Plant, 57626, 605/967-2511, Donn Dupper, supt.; 245 met.; gen. 950 kw eng.; pur. 2.5 million kwh.

FLANDREAU Mun. Electric Plant, 136 Second Ave., E., 57028, 605/997-2671, Don Johnson, supt.; 1,100 met.; gen. 1,540 kw eng.

FORT PIERRE Light & Power, Box 672, 57532, 605/223-2717, James Klemann, city supt.; 530 met.; no gen.; pur. 7.8 million kwh; rev. $190,000.

GROTON Light & Water Dept., Box 121, 57445, 605/397-2690, David Anderson, supt. (1921); 560 met.; no gen.; pur. 4.3 million kwh; rev. $98,262.

HECLA Light & Power Plant, 57446, 605/994-2080, Delwyn Tisher, supt.; 250 met.; gen. 200 kw eng.

HOWARD City Light Plant, 57349, 605/772-4391, Eugene Barrick, supt.; 600 met.; gen. 500 kw eng.; rev. $115,792.

LANGFORD Mun. Light Dept., 57454, 605/493-4441, Bruce A. Likness, supt.; 230 met.; no gen.; pur. 1.5 million kwh.

MADISON Mun. Utilities, 116 W. Center St., Box 308, 57042, 605/256-4872, Virgil Schoberl, supt. (1922); 2,190 met.; gen. 3,186 kw eng.; pur. 32.4 million kwh; rev. $550,695.

McLAUGHLIN Mun. Power System, 57642, 605/823-4428, Edward Walker, mayor, (1969); 385 met.; no gen.; pur. 6.5 million kwh; rev. $150,000.

MILLER Mun. Light Plant, 120 W. Second St., 57362, 605/853-2705, Merle Dirksen, supt. (1904); 1,020 met.; no gen.; pur. 19.1 million kwh; rev. $306,000.

ONIDA Mun. Light & Water Works, Box 72, 57564, Douglas Ripley, supt.; 538 met.; gen. 500 kw eng., 3,000 kwh; pur. 2.8 million kwh; rev. $78,695.

PARKER Mun. Light Plant, 57053, Donald Muller, supt.; 547 met.; gen. 1005 kw eng.; rev. $125,225.

PIERRE Mun. Power Co., 222 E. Dakota, 57501, 605/224-7341, Dave Padgett, dir. pub. wks. (1900); 5,197 met.; pur. 112.8 million kwh; rev. $2,310,578.

PLANKINTON Light & Power Plant, 57368, 605/942-4591, Ed Lutz, supt.; no gen.

SIOUX FALLS Mun. Light and Power Dept., 2000 N. Minnesota Ave., 57104, 605/339-7150, Frank W. Josten, supt. (1901); 1,408 met.; no gen.; pur. 44.6 million kwh; rev. $1,349,345.

TYNDALL Light & Water Plant, P.O. Box 29, 57066, 605/589-3481, Alfred J. Novotny, supt. (1911); 597 met.; gen. 900 kw eng.; pur. 9.5 million kwh; rev. $290,000.

VERMILLION City Light & Power Plant, 25 Center St., 57069, 605/624-2781, Lawrence Burrell, supt. (1915); 3,136 met.; gen. 2,455 kw eng., 8,300 kwh; pur. 27.5 million kwh; rev. $699,690.

VOLGA Mun. Light & Power, 108 Kasson Ave., 57071, 605/627-2341, Marlow Erdman, supt. (1941); 600 met.; gen. 550 kw eng.; pur. 5.1 million kwh; rev. $110,000.

WATERTOWN Mun. Utilities Dept., 901 Fourth Ave., S. W., 57201, 605/886-5733, Pete Swanson, supt. (1921); 7,981 met.; no gen.; pur. 130 million kwh; rev. $316,600.

WESSINGTON SPRINGS Mun. Light & Power, 57382, 605/539-3931, Lawrence Myers, supt.; 580 met.; gen. 1,235 kw eng.; pur. 5 million kwh.

WHITE, City of, 57276, 605/629-3521, Orvin Anderson, supt.; no gen. **(established, 1978)**

WINNER Utilities, 57580, Al Fischer, supt.; 1,550 met.; gen. 1,380 kw eng.; pur. 20 million kwh; rev. $247,000

(Oglala Sioux Tribal Council, Pine Ridge, S. D., and Oglala Sioux Housing Authority, Pine Ridge, S. D., own electric systems which are operated under lease agreements by Nebraska Public Power District, Columbus, Neb.)

TENNESSEE

(All local publicly owned electric utilities in Tennessee are distributors of Tennessee Valley Authority power and purchase all of their power requirements from TVA.)

ATHENS Utilities Bd., 100 Englewood Rd., Box 689, 37303, 615/745-4501, George H. Usry, gen. mgr. (1939); 10,755 met.; pur. 345.8 million kwh; rev. $11,004,850.

BENTON COUNTY BD. OF PUBLIC UTILITIES, Camden, Tenn., Box 445, 38320, 901/584-8251, Glenn C. Pafford, supt. (1940); 7,323 met.; pur. 170.4 million kwh; rev. $4,829,111.

BLOUNT Electric System, 264 N. Rankin Rd., Alcoa, Tenn., 37701, 615/982-2533, David W. Switzer, gen. mgr. (1956); 14,442 met.; pur. 308.3 million kwh; rev. $8,184,304.

BOLIVAR Electric Dept., Box 188, 38008, 901/658-5257, Beryl F. Williams, mgr. (1936); 8,200 met.; pur. 183 million kwh; rev. $5,819,063.

BRISTOL Electric System, 137 Edgemont Ave., P.O. Box 787 37620, 615/968-1526, R. Michael Browder, gen. mgr. (1945); 23,528 met.; pur. 607.2 million kwh; rev. $18,603,738.

BROWNSVILLE Utility Dept., Box 424, 38012, 901/772-1213, John F. Sharpe, mgr. (1939); 3,880 met.; pur. 98.7 million kwh; rev. $3,039,006.

CARROLL COUNTY Electrical Dept., Huntingdon, Tenn., 38344, 901/986-5284, C. E. Francisco, mgr. (1938); 12,711 met.; pur. 292.7 million kwh; rev. $7,593,522.

CHATTANOOGA Electric Power Board, 537 Cherry St., 37402, 615/629-3300, John S. McQueen, gen. mgr. (1939); 120,221 met.; pur. 4,957.3 million kwh; rev. $158,128,426.

CLARKSVILLE Dept. of Electricity, 200-202 S. Second St., 37040, 615/648-8151, Dalton B. Smith, gen. mgr. (1939); 19,652 met.; pur. 519.3 million kwh; rev. $16,595,493.

CLEVELAND Utilities, 2450 Guthrie Drive, N. W., 37311, 615/472-4521, M. E. Beavers, gen. mgr. (1939); 18,352 met.; pur. 620.2 million kwh; rev. $19,088,766.

CLINTON Utilities Bd., Box 296, 37716, 615/457-9232, E. H. Ross, mgr. (1939); 19,502 met.; pur. 453.6 million kwh; rev. $14,556,340.

COLUMBIA Power System, Box 633, 38401, 615/388-4833, J. Phillips Woodruff, mgr. (1939); 14,923 met.; pur. 414.6 million kwh; rev. $12,564,422.

COOKEVILLE Electric Dept., 45 E. Broad St., Box 849, 38501, 615/526-9591, W. R. Holland, supt. (1944); 8,781 met.; pur. 253.3 million kwh; rev. $6,916,948.

COVINGTON Electric System, Box 488, 38019, 901/476-7104, Leo Wingate, Jr., mgr. (1904); 2,700 met.; pur. 101 million kwh; rev. $2,966,000.

DAYTON Electric Dept., Box 226, 37321, 615/775-1817, Paul Hill, supt. (1927); 5,799 met.; pur. 150.7 million kwh; rev. $3,792,622.

DICKSON Electric Dept., 202 S. Main St., Box 627, 37055, 615/446-9051, Ernest R. Brown, mgr. (1936); 15,994 met.; pur. 348.8 million kwh; rev. $9,253,131.

DYERSBURG Electric System, 211 E. Court St., Box 664, 38024, 901/285-2941, Julius P. Crawford, mgr. (1902); 9,507 met.; pur. 316.9 million kwh; rev. $9,586,555.

ELIZABETHTON Electric System, Box 790, 37643, 615/542-2101, Frank L. Curde, mgr. (1945); 18,654 met.; pur. 381.7 million kwh; rev. $11,591,629.

ERWIN Utilities, 244 Love St., 37650, 615/743-6191, Howard C. Brown, mgr. (1945); 6,329 met.; pur. 151.1 million kwh; rev. $4,217,367.

ETOWAH Utilities Dept., Drawer N, 37331, 615/263-0441, Paul R. Sitzlar, mgr. (1939); 3,681 met.; pur.100.2 million kwh; rev. $2,604,991.

FAYETTEVILLE ELECTRIC SYSTEM, 408 W. College St., Drawer E, 37334, 615/433-1522, William E. Laughlin, mgr. (1937); 12,178 met.; pur. 275.3 million kwh; rev. $8,588,165.

GALLATIN Electric Dept., Box 167, 37066, 615/452-5152, William N. Parker, supt. (1937); 7,045 met.; pur. 253.5 million kwh; rev. $7,913,090.

GREENEVILLE Light & Power System, Box 420, 37743, 615/639-8121, Robert C. Lay, mgr. (1945); 22,935 met.; pur. 632.9 million kwh; rev. $18,920,471.

HARRIMAN Utility Bd., Roane St., Box 434, 37748, 615/882-3242, Jack Howard, mgr. (1939); 8,991 met.; pur. 314.9 million kwh; rev. $7,064,000.

HUMBOLDT Utilities, 207 S. Thirteenth Ave., 38343, 901/784-9212, Marvin W. Hill, supt., (1939); 4,332 met.; pur. 167.6 million kwh; rev. $4,898,751.

JACKSON Utility Division, Electric Dept., 219 E. College, Box 68, 38301, 901/424-1911, Joe H. Exum, gen. mgr. (1938); 22,713 met.; pur. 874.4 million kwh; rev. $25,547,577.

JELLICO Electric System, 400 S. Main St., Box 510, 37762, 615/424-8431, John Wm. Leach, Jr., mgr. (1943); 4,111 met.; pur. 71.3 million kwh; rev. $1,954,443.

JOHNSON CITY Power Bd., 100 N. Roan St., Box 1636, 37601, 615/928-2112, Roy L. Taylor, mgr. (1945); 42,601 met.; pur. 1,120.9 million kwh; rev. $32,799,418.

KNOXVILLE Utilities Bd., Box 1951, 37901, 615/524-2911, Charles H. Dean, Jr., gen. mgr. (1939); 125,689 met.; pur. 3.9 million kwh; rev. $120,066,311.

LA FOLLETTE Electric Dept., N. Tennessee Ave., Box 1411, 37766, 615/562-3316, Leonard E. Watson, gen. mgr. (1939); 13,656 met.; pur. 256.5 million kwh; rev. $7,040,197.

LAWRENCEBURG Power System, 1607 N. Locust Ave., 38464, 615/762-7161, James W. Collins, supt. (1908); 13,631 met.; pur. 308.3 million kwh; rev. $8,407,319.

LEBANON Electric Dept., City Hall, 37087, 615/444-0825, Jessie Coe, comm. of pub. wks. (1942); 6,501 met.; pur. 231.5 million kwh; rev. $5,875,296.

LENOIR CITY Utilities Board, 200 Depot St., 37771, 615/986-6591, Kenneth Dutton, mgr. (1938); 22,402 met.; pur. 567.8 million kwh; rev. $17,681,066.

LEWISBURG Electric System, 599 N. 50A Bypass, Box 90, 37091, 615/359-2544, Richard Turner, gen. mgr. (1947); 3,985 met.; pur. 155.1 million kwh; rev. $4,741,078.

LEXINGTON Electric System, Box 30, 38351, 901/968-3663, Herman Holmes, mgr. (1939); 14,845 met.; pur. 277.1 million kwh; rev. $7,479,727.

LOUDON Utilities, Box E, 37774, 615/458-2091, Randy McGill, mgr. (1939); 4,333 met.; pur. 100.7 million kwh; rev. $2,696,825.

MARYVILLE Utilities Bd., Box 280, 37801, 615/982-7561, Elmer Taylor, mgr. of power (1939); 13,122 met.; pur. 296.1 million kwh; rev. $7,641,819.

McMINNVILLE Electric System, Box 608, 37110, 615/473-3144, Donald R. Collette, gen. mgr. (1939); 5,612 met.; pur. 183.6 million kwh; rev. $5,686,921.

MEMPHIS Light, Gas & Water Div., 220 S. Main St., 38104, 901/528-4011, David F. Hansen, pres., (1939); 305,873 met.; pur. 9,270.4 million kwh; rev. $280,068,309.

MILAN Dept. of Public Utilities, 407 S. Second St., 38358, 901/686-1537, Harold L. Crenshaw, supt. (1934); 6,429 met.; pur. 171 million kwh; rev. $5,165,549.

MORRISTOWN Utility Comm., 441 W. Main St., 37814, 615/586-4121, Edwin H. Tucker, gen. mgr. (1901); 9,621 met.; pur. 114.4 million kwh; rev. $11,320,118.

MOUNT PLEASANT Power System, Box 186, 38474, 615/379-3233, Dan Gibson, Jr., mgr. (1939); 2,931 met.; pur. 75.7 million kwh; rev. $2,219,003.

MURFREESBORO Electric Dept., 225 N. Walnut St., 37130, 615/893-5514, Herman O. Jones, gen. mgr. (1937); 15,126 met.; pur. 494.4 million kwh; rev. $14,820,521.

NASHVILLE Electric Power Board of the Metropolitan Government of Nashville and Davidson County, Church St. at 13th Ave., 37246, 615/747-3831, Paul P. Hembree, gen. mgr. (1939); 204,197 met.; pur. 7,819.4 million kwh; rev. $235,786,650.

NEWBERN Light & Water Dept., E. Main St., Box J, 38059, 901/627-3221, Donald R. Campbell, supt. (1943); 1,252 met.; pur. 28.7 million kwh; rev. $879,600.

NEWPORT Utilities Board, Box 519, 37821, 615/623-3074, Lindsay Boyd, gen. mgr. (1940); 13,195 met.

OAK RIDGE, City of, P. O. Box 1, 37830, 615/483-5671, Phillip M. Marcum, supt. (1960); 12,283 met.; pur. 317.5 million kwh; rev. $9,773,523.

PARIS Bd. of Public Utilities, 117 E. Washington St., Box 460, 38242, 901/642-1322, James D. Huffman, supt. (1938); 14,589 met.; pur. 403.7 million kwh; rev. $9,496,077.

PULASKI Electric System, Box 368, 38478, 615/363-2522, James A. Hanna, supt. (1935); 10,185 met.; pur. 289.2 million kwh; rev. $9,052,466.

RIPLEY Power & Light, South Main St., Box 69, 38063, 901/635-2323, Mike Allmand, mgr. (1935); 5,366 met.; pur. 176.7 million kwh; rev. $5,368,158.

ROCKWOOD Electric Utility, Box 108, 37854, 615/354-0514, Charles W. Johnson, gen. mgr. (1939); 9,339 met.; pur. 203.8 kwh; rev. $6,507,649.

SEVIER COUNTY ELECTRIC SYSTEM, Box 310, Sevierville, 37862, 615/453-2887, Jack J. Delozier, supt. (1935); 17,727 met.; pur. 453.4 million kwh; rev. $15,048,908.

SHELBYVILLE Power System, 308 S. Main St., Box 530, 37160, 615/684-3448, Eugene Crowell, mgr. (1939); 6,222 met.; pur. 230.6 million kwh; rev. $5,773,671.

SMITHVILLE Electric System, 37166, 615/597-4735, Mark Ashburn, mgr. (1969); 1,963 met.; pur. 50.2 million kwh; rev. $1,387,259.

SOMERVILLE Electric Dept., 38068, 901/465-3676, Kennie German, supt. (1936); 1,132 met.; pur. 28.4 million kwh; rev. $799,732.

SPARTA Electric System, 119 E. Broadway, Box 468, 38583, 615/836-3254, Grady Sparkman, mgr. (1961); 2,421 met.; pur. 69.8 million kwh; rev. $1,926,456.

SPRINGFIELD Dept. of Electricity, 123 Fifth Ave., W., Box C, 37172, 615/384-3561, W. Royce Williams, supt. (1905); 4,521 met.; pur. 145 million kwh; rev. $4,531,434.

SWEETWATER Board of Pub. Utils., Box 191, 37874, 615/337-6890, Lewis Wayne Roach, gen. mgr. (1939); 5,080 met.; pur. 125.5 million kwh; rev. $4,284,972.

TRENTON Light & Water Dept., City Hall, 309 College St., 38382, 901/855-1561, W. Luther Chapman, mgr. (1910); 2,298 met.; pur. 53.6 million kwh; rev. $1,539,996.

TULLAHOMA Utility Board, 901 S. Jackson, 37388, 615/455-4515, Bob G. Burton, gen. mgr., (1930); 7,400 met.; pur. 205.5 million kwh; rev. $6,480,402.

UNION CITY Electric System, 215 E. Grove St., 38261, 901/885-5506, Travis D. Housley, mgr. (1952); 5,135 met.; pur. 272.9 million kwh; rev. $8,189,917.

WEAKLEY COUNTY Mun. Electric System, Box 170, Martin, Tenn. 38237, 901/587-9521, Gerald Brooks, supt. (1938); 16,049 met.; pur. 389.1 million kwh; rev. $11,681,873.

WINCHESTER Power System, 219 Second Ave., N. W., 37398, 615/967-2238, Lynn Bean, mgr. (1939); 3,339 met.; pur. 86 million kwh; rev. $2,257,457.

TEXAS

AUSTIN, City of, Box 1088, 78767, 512/397-1600, Richard L. Hancock, dir. (1895); 154,681 met.; gen. 1950 kw steam, 2,801.2 million kwh; pur. 996,000 kwh; rev. $148,415,095.

BAIRD Mun. Utilities, 228 Walnut St., 79504, 915/854-1214, A. E. Dyer, Jr., city mgr. (1940); 766 met.; gen. 3,300 kw eng., 7.2 million kwh; pur. none; rev. $163,000.

BARTLETT, City of, 140 W. Clark 76511, 817/527-3219, Mike Williams, util. adm.; 600 met.; gen. 420 kw eng.

BASTROP Electric Dept., Box 427, 78602, 512/321-3941, Willard Lookabill, supt.

BELLVILLE Utilities, 30 S. Holland, P.O. Drawer 817, 77418, 713/865-3136, John Mumme, city adm.; 1,560 met.; no gen.; pur. 28.5 million kwh; rev. $1,142,618.

BOERNE Utilities, 402 E. Blanco, 78006, 512/249-3970, Edgar Schwarz, Jr., city admr.; 1,000 met.; no gen.; pur. 10 million kwh.

BOWIE Utilities, 76230, 817/872-1114, Charles H. Webb, elec. supt.; 2,167 met.; no gen.; pur. 13.6 million kwh.

BRADY Water & Light Works, 212 W. Commerce St., Box 351, 76825, 915/597-2445, Richard Rickman, supt. (1914); 2,820 met.; gen. 22,000 kw eng., 42.5 million kwh; pur. none; rev. $1,336,672.

BRAZOS RIVER AUTHORITY, Box 7555, Waco, 76710, Walter J. Wells, gen. mgr.; gen. 22,500 kw hydro, 40.7 million kwh; rev. $274,000.

BRENHAM, City of, Mun. Light & Power System, 210 N. Park St., Box 361, 77833, 713/836-7911, Johnny P. Smith, city mgr., (1941); 4,522 met.; no gen.; pur. 133.1 million kwh; rev. $5,181,270.

BRIDGEPORT Light & Power System, 812 Halsell, 76026, Doug Whitehead, city admr.

BROWNFIELD Mun. Power & Light Plant, 218 W. Main St., 79316, 806/637-4547, Alva J. Geron, city mgr. (1923); 4,273 met.; gen. 22,920 kw, 16,420 kw eng., 6,500 kw gas turbine, 43 million kwh; pur. 14.5 million kwh; rev. $2,660,954.

BROWNSVILLE Public Utilities Board, 1425 Robinhood Dr., Box 3270, 78520, 512/542-6210, Robert E. Roundtree, gen. mgr. (1904); 22,437 met.; gen. 100,550 kw, 46,200 kw steam, 54,350 kw gas turbine, 299.2 million kwh; pur. 206.3 million kwh; rev. $22,834,589.

BRYAN Mun. Elec. System, Box 1000, 77801, 713/779-5622, Gailord White, dir., elec. utils., (1919); 16,69[illegible] met.; gen. 245,000 kw, 225,000 kw steam, 20,000 kw gas turbine, 531.2 million kwh; pur. 3.7 million kwh; rev. $20,772,201.

BURNET Utilities, 127 E. Jackson St., 78611, 512/756-4501, Kenneth Taylor, city mgr.; 1,280 met.; no gen.; pur. 10.3 million kwh; rev. $172,291.

CALDWELL Mun. Light Dept., 214 W. Buck St., 77836, 713/567-3271, Christopher Alton, mgr.; 1,248 met.; no gen.; pur. 17.7 million kwh; rev. $478,674.

CANADIAN City Power Plant, 6 Main St., 79014, 806/323-6473, Lester Hodges, supt. (1924); 1,053 met.; gen. 6,625 kw eng., 9.9 million kwh; pur. none; rev. $236,783.

CASTROVILLE Utility System, Box 479, 78009, 512/538-2224, James W. McAnelly, util. mgr. (1948); 738 met.; no gen.; pur. 6.1 million kwh; rev. $346,006.

COLEMAN Mun. Light & Power, 201 N. Colorado St., Box 592, 76834, 915/625-2939, Elmer Rodgers, supt. (1904); 2,700 met.; gen. 13,150 kw, 1,750 kw steam, 11,400 kw eng., 27.6 million kwh; pur. 6 million kwh; rev. $1,356,239.

COLLEGE STATION Utilities, 1101 Texas Ave., Box 9960, 77840, 713/846-8886, North Bardell, city mgr.; 3,200 met.; no gen.; pur. 50 million kwh.

CROSBYTON Power & Light Dept., 119-23 S. Ayrshire St., Box 2[illegible], 79322, 806/675-2301, Johnn[illegible] Wilson, supt. (1937); 890 m[illegible]; g[illegible] 4,000 kw eng., 9.6 million kw[illegible], pur. none; rev. $300,000.

CUERO, City of, P.O. Box 512, 77954, 512/275-6114; James H. Pratt, city mgr.; 3,245 met.; no gen.; pur. 57.9 million kwh; rev. $2,240,241.

DENTON Mun. Utilities, 215 E. McKinney, 76201, 817/566-8230, Robert E. Nelson, dir. (1905); 17,600 met.; gen. 179,000 kw, 169,000 kw steam, 10,000 kw eng., 284.6 million kwh; pur. 178.9 million kwh; rev. $17,981,302.

ELECTRA Distribution System, 101 W. Cleveland, 76360, 817/495-2146, John Boland, city, mgr.

FARMERSVILLE Mun. Light & Power, 303 S. Main, 75031; 214/782-6151; Raymond R. Brandon, mayor; no gen.

FLATONIA Elec. Dept., Box 375, 78941, 512/865-3337; Daniel F. Janak, supt.; 699 met.; no gen.; pur. 8.1 million kwh; rev. $110,762.

FLORESVILLE Electric Light & Power System, 1400-14th St., Box 218, 78114, 512/393-3131, Fred R. Wauters, mgr. (1943); 5,600 met.; no gen.

FLOYDADA Electric Dept., Box 10, 79235, 806/983-2834, William A. Feuerbacher, city mgr. (1939); 1,380 met.; gen. 6,140 kw eng., 15.2 million kwh; pur. none; rev. $327,209.

FREDERICKSBURG, City of, Electric Dept., Box 111, 78624, 512/997-7521, Walter O. Fuhrmann, util. mgr. (1935); 3,600 met.; no gen.; pur. 59.8 million kwh; rev. $2,305,238.

GARLAND Power & Light System, Box 401889, 75040, 214/494-7251, Robert E. Corder, dir. (1922); 40,050 met.; gen. 440,000 kw steam, 1,489 million kwh; pur. 19 million kwh; rev. $52,000,000.

GARRISON Electric Dept., Box 207, 75946, 713/347-2201; Elmer Boatman, dir.; 400 met.; no gen.; pur. 1.4 million kwh.

GEORGETOWN Water & Light, 103 E. Seventh, Box 409, 78626, 512/863-5533, L. Wood, city mgr.; 2,600 met.; no gen.; pur. 33.6 million kwh; rev. $389,514.

GIDDINGS, City of, Lighting & Power System, 118 E. Richmond St., 78942, 713/542-2311, Larry Pippen, city mgr. (1941); 1,878 met.; no gen.; pur. 27 million kwh; rev. $1,507,945.

GOLDTHWAITE Utilities, 1218 Fisher St., Box 450, 76844, 915/648-3186, Dale Allen, city mgr. (1941); 745 met.; no gen.; rev. $133,178.

GONZALES Electric System, Box 547, 78629, 512/672-2815, Calvin E. Spacek, city mgr.; 2,368 met.; no gen.

GRANBURY Mun. Electric Dept., 111 S. Houston, 76048, 817/573-1114, Albert Lawrence, supt.; (1912); 1,530 met.; gen. 392 kw eng.; pur. 25.8 million kwh; rev. $900,791.

GREENVILLE Mun. Light & Power, Box 1049, 75401, 214/455-2880, John W. Tarpley, dir. of elec. utils., (1891); 9,347 met.; gen. 100,000 kw, 85,000 kw steam, 15,000 kw eng., 210 million kwh; pur. 32 million kwh; rev. $9,637,969.

GUADALUPE-BLANCO RIVER AUTHORITY, Box 271, Seguin, 78155, 512/379-5822, Gregory E. Rothe, oper. mgr., (1963); wholesale only; gen. 16,080 kw hydro, 57.9 million kwh; pur. none; rev. $1,166,082.

HALLETSVILLE Mun. Utilities, Box 257, 77964, 512/798-3681, Thomas H. Kostelnik, mgr. (1891); 1,378 met.; no gen.; pur. 21.3 million kwh; rev. $736,180.

HEARNE Mun. Electric System, 210 Cedar St., Box 151, 77859, 713/279-3461, Eddie Luster, supt. (1912); 2,350 met.; gen. 7,775 eng., 28.9 million kwh; pur. 221,200 kwh; rev. $532,996.

HEMPSTEAD Utilities, P.O. Box 1005, 77445, 713/826-2486, James Vines, mgr.

HONDO Electric System, 1600 Ave. M, Box 398, 78861, 512/426-3378, Oscar Dominguez, supt.; 1,697 met.; no gen.; pur. 17.2 million kwh; rev. $309,243.

JASPER Electric System, 272 E. Lamar St., 75951, 713/384-4651, Wayne DuBose, city mgr. (1941); 3,499 met.; gen. 7,300 kw eng., 23.7 million kwh; pur. 55.2 million kwh; rev. $1,901,000.

KIRBYVILLE Light & Power, 312 E. Drew, 75956, 713/423-2464, C. B. Herndon, mgr.

LA GRANGE Electric Utilities, Box 339, 78945, 713/968-5805, J. D. Legler, city mgr.; 1,825 met.; no gen.; pur. 19.1 million kwh; rev. $284,359.

LAMPASAS Public Utilities, 302 E. Third St., Box 666, 76550, 512/556-3641, Nolan R. Word, supt. (1946); 2,620 met.; no gen.; pur. 36.6 million kwh; rev. $415,446.

LEXINGTON Mun. Electric Dept., Box 56, 78947, 713/773-2221, Jerry E. Poston, foreman (1939); 395 met.; no gen.; pur. 4 million kwh; rev. $89,264.

LIBERTY Mun. Electric System, 1829 Sam Houston St., 77575, 713/336-3684, Roy N. Bennett, city mgr. (1939); 3,292 met.; no gen.; pur. 95.4 million kwh; rev. $3,113,886.

LIVINGSTON Mun. Light Dept., Box 867, 77351, 713/327-4311, T. Nevinger, city mgr.; 2,072 met.; no gen.; pur. 30 million kwh; rev. $658,043.

LLANO Utilities, 301 W. Main St., Box 337, 78643, 915/247-4158, George C. Rogers, city mgr. (1946); 1,473 met.; no gen.; pur. 19.6 million kwh; rev. $498,295.

LOCKHART Utilities, 308 W. San Antonio St., Box 239, 78644, 512/398-3461, Cecil E. Massey, city mgr.; 2,800 met.; no gen.; pur. 19.2 million kwh; rev. $1,300,000.

LOWER COLORADO RIVER AUTHORITY, 3700 Lake Austin Blvd., Box 220, Austin, 78767, 512/474-5931, Charles Herring, gen. mgr. (1935); 18,845 met.; gen. 1,280,000 kw, 1,050,000 kw steam, 230,000 kw hydro, 3,353.6 million kwh; pur. 41.1 million kwh; rev. $86,453,334.

LUBBOCK Power & Light, Box 2000, 79457, 806/763-9381, Larry Cunningham, city mgr. (1916); 25,677 met.; gen.; 185,750 kw, 118,500 kw steam, 11,250 kw eng., 56,000 kw gas turbine, 513 million kwh; pur. none; rev. $10,010,000.

LULING Utilities, Box 630, 78648, 512/875-2469, Sam Lattimore, city mgr. (1941); 2,350 met.; no gen.; pur. 39 million kwh; rev. $1,553,953.

MASON Utilities, 124 Moody St., Box 68, 76856, 915/347-6449, Carlton Crouch, city mgr. (1955); 1,131 met.; no gen.; pur. 13.1 million kwh; rev. $186,475.

MOULTON Electric Dept., Box 369, 77975, 512/596-4621, Richard Kresta, Jr., mgr. (1941); 500 met.; no gen.; pur. 6.6 million kwh; rev. $99,068.

NEW BRAUNFELS Utilities, 263 E. Main Plaza, Box 289, 78130, 512/625-9125, William C. Printy, Jr., elec. line supt. (1942); 13,000 met.; 3.5 million kwh; pur. 326.1 million kwh; rev. $13,611,948.

NEWTON Mun. Utilities, Box 86, 75966, 713/379-3061, David Rydman, mayor; 729 met.; no gen.; rev. $134,621.

PLAINS, City of, 601 E. 11th, Box 550, 79355, 806/456-2288, Vennum Fitzgerald, city mgr.; 365 met.; gen. 1,500 kw eng.

ROBSTOWN Utility System, Box 872, 78380, 512/387-3554, Richard H. Borchard, Jr., supt. (1939); 4,338 met.; gen. 20,700 kw eng., 59.1 million kwh; pur. none; rev. $2,212,044.

SAN ANTONIO City Public Service Board, Box 1771, 78296, 512/227-3211, J. K. Spruce, gen. mgr. (1942); 323,553 met.; gen. 3,034,000 kw steam, 7,453.4 million kwh; pur. none; rev. $274,601,000.

SAN AUGUSTINE City Light & Water Dept., 301 S. Harrison St., 75972, 713/275-2121, Alton Shaw, city mgr.

SANGER Electric System, 200 Bolivar, 76266, 817/458-3578, Lindon Carr, mgr.

SCHULENBURG Utilities Dept., Box 8, 78956, 713/743-4126, S. M. Barrington, mgr. (1941); 1,250 met.; no gen.; pur. 16 million kwh; rev. $245,411.

SEGUIN Electric Utilities, 205 N. River St., Box 591, 78155,

512/379-3212, George A. Cushman, mgr.; 5,200 met.; gen. 500 kw eng; pur. 72.5 million kwh; rev. $4,216,243.

SEYMOUR Power & Light, Box 31, 76380, 817/888-3148, John R. Milford, city. adm. (1929); 1,155 met.; gen. 1,075 kw eng.; pur. 18.6 million kwh; rev. $759,920.

SHINER Light & Water Utilities, Box 308, 77984, 512/594-3351, George W. Minear, mayor; 1,000 met.; gen. 900 kw eng.

SMITHVILLE Light & Water Dept., Box 449, 78957, 512/237-3282, Benjamin F. Wesson, mgr. (1939); 1,700 met.; no gen.; pur. 19.3 million kwh; rev. $688,631.

SONORA, City of, Power & Light, 201 N. Main, 76950, 915/387-2558, James R. Dickason, mgr., (1942); 1,500 met.; no gen.; pur. 19.6 million kwh; rev. $750,000. 461-4400, F.B. (Pete) Eckert, exec.

TIMPSON Light & Water Dept., Box 369, 75975, W. H. Eddins, supt.

TULIA, City of, Power & Light, 201 N. Maxwell St., 79088, 806/995-3547, N. D. Waggoner, dir. elec. utils., (1912); 2,250 met.; gen. 18,020 kw eng., 30.6 million kwh; pur. none; rev. $1,160,000.

TRINITY RIVER AUTHORITY, Box 5768, Arlington, 76011, 817/461-3151, Danny Vance, mgr.

VERNON Mun. Power Plant, Box 1617, 76384, 817/552-2581, W. B. Steele, supt.; 2,337 met.; gen. 8,696 kw eng.; 20.7 million kwh; pur. none; rev. $384,494.

WAELDER Utilities, Box 427, 78959, 512/665-3131, Alton Lancaster, mayor.

WEATHERFORD Mun. Water & Electric Dept., 119 Palo Pinto St., Box 255, 76086, 817/594-5441, H. W. Tull, supt.; 5,398 met.; gen. 5,000 kw eng.; pur. 48.2 million kwh; rev. $879,000.

WEIMAR, City of, Box 67, 78962, 713/725-8554, F. E. Parks, city mgr.; 1,064 met.; no gen.; pur. 25.2 million kwh; rev. $1,189,619.

WHITESBORO Power & Light Plant, 112 W. Main, 76273, 214/564-3122, Lindon Carr, supt., dist. and trans.; 1,400 met.; gen. 2,768 kw eng., 226,000 kwh; pur. 8.2 million kwh.

YOAKUM Mun. Utilities, Box 738, 77995, 512/293-2641, J. W. Dodson, city mgr.; 2,500 met.; no gen.; pur. 23 million kwh.

UTAH

BEAVER CITY Mun. Electric Light & Water, Box 271, 84713, 801/438-2451, Lamont D. Bettridge, mgr.; 700 met.; gen. 900 kw hydro, 4 million kwh; pur. 15.5 million kwh.

BLANDING Electric Dept., Box 68, 84511, 801/678-2791, Francis D. Nielson, mgr.

BOUNTIFUL City Light & Power, 198 S. 200 West, 84010, 801/295-9496, W. Berry Hutchings, mgr. (1935); 9,995 met.; gen. 32,200 kw; 8,200 kw eng., 25,000 kw hydro; 8.6 million kwh; pur. 134.1 million kwh; rev. $3,808,109.

BRIGHAM CITY Electric Utility, 20 N. Main, Box A, 84302, 801/723-8521, Jim Davis, mgr.

ENTERPRISE Power Board, 84725, 801/878-2212, Richard P. Truman, supt. (1972); 270 met.; no gen.; pur. [illegible] million kwh.

E[illegible]RAIM City Light and Power Dept., Box 687, 5 S. Main, 84627, 801/283-4631, Dick Bailey, mgr.; 700 met.; gen. 200 kw hydro, 1.1 million kwh; pur. 16.1 million kwh; rev. $177,500.

FAIRVIEW Mun. Light & Power Plant, 84629, 801/427-3858, Ray D. Eicher, mayor; 380 met.; no gen.; pur. 5.7 million kwh.

FILLMORE CITY, 96 S. Main St., 84631, 801/745-5314, Ralph Robinson, mgr. (1918); 871 met.; no gen.; pur. 24.2 million kwh; rev. $606,589.

HEBER Light & Power, 31 S. 100 West, 84032, 801/654-1581, Ray Farrell, supt. (1909); 3,500 met.; gen. 800 kw hydro, 5 million kwh; pur. 35 million kwh; rev. $1,750,000.

HOLDEN Electric Light System, 84636, 801/795-2253, Evan B. Stevens, electrician; 120 met.; no gen.; pur. 2 million kwh.

HURRICANE Power Committee, Box 580, 84737, 801/635-2811, Richard Marchal, mgr. (1974); no gen.; pur. 13.7 million kwh.

HYRUM City Corp., 90 W. Main 84319, 801/245-6477, Reece D. Nielsen, comm.; 782 met.; gen. 450 kw hydro, 1.2 million kwh; pur. 22.5 million kwh.

KANOSH Town Corp., Box 96 84637, 801/759-2651, Grant Brunson, town pres.; no gen.; pur. 2 million kwh.

KAYSVILLE City Power & Light, 44 No. Main, 84037, 801/376-4234, Walt Meacham, supt. elec. dept.; 2,700 met.; no gen.; pur. 31.9 million kwh; rev. $820,000.

LEHI City Power, 51 N. Center St., 84043, 801/768-3545, Glen A. Carter, mgr. (1926); 2,200 met.; no gen.; pur. 19.3 million kwh.

LEVAN Electric System, 84639, 801/623-1959, Lane Howard, town pres.; 145 met.; no gen.

LOGAN City Mun. Light Plant, 61 W. 100 North St., Box 527, 84321, 801/752-3060, Cecil W. Kunz, mgr. (1903); 11,043 met.; gen. 1,400 kw hydro, 8.6 million kwh; pur. 119.8 million kwh; rev. $4,434,559.

MANTI Light & Power, 191 N. Main 84642, 801/835-2321, Tony Peterson, mgr.

MEADOW Town Electric, 84644, 801/842-2881, Junior L. Bond, town pres.; 85 met.; no gen.; pur. 1.8 million kwh.

MONROE City Electric Light Dept., Box A, 55 N. Main 84754, 801/527-3511, Duane E. Nay, mayor; gen. 225 kw hydro, 1.4 million kwh; pur. 9.3 million kwh.

MORGAN City Corp., 48 W. Young St., Box 485, 84050, 801/829-3551, Dennis D. Woolsey, mgr. (1933); 718 met.; no gen.; pur. 8.6 million kwh; rev. $151,634.

MT. PLEASANT Mun. Electric Light & Power, 115 W. Main St., 84647, 801/462-2456, John Thacker, city mgr.; 750 met.; gen. 300 kw hydro, pur. 12.5 million kwh.

MURRAY City Power, 153 W. 4800 South, 84107, 801/268-8933, Jon C. Young, gen. mgr. (1912); 12,354 met.; gen. 7,590 kw, 6,790 kw eng., 800 kw hydro, 7 million kwh; pur. 197.1 million kwh; rev. $6,338,446.

NEPHI Mun. Electric Dept., 84648, 801/623-0822, J. Barnes Jenkins, mayor; 1,011 met.; no gen.

OAK CITY Mun. Electric Dept., 84649, 801/846-2861, Wilburn Olsen, mgr.; no gen.; pur. 2 million kwh.

PARAGONAH Mun. Light Dept., 84760, 801/477-3605, Scott Barton, mayor; 125 met.; no gen.; pur. 1 million kwh.

PAROWAN City Electrical System, Box 576, 84761, 801/477-3331, J.C. Robinson, mayor; 550 met.; gen. 1,100 kw hydro, 4.8 million kwh; pur. 9.8 million kwh.

PAYSON City Corp., Box 188, 84651, 801/465-9226, Gary Tassainer, mgr.; 1,400 met.; no gen.

PRICE Mun. Corp., 84501, 801/637-0763, Walter T. Axelgard, mayor.

PROVO City Power, 251 W. 800 N., Box 658, 84601, 801/373-7170, Bud L. Bonnett, dir. (1940); 20,141 met.; gen. 24,000 kw; 14,000 kw steam, 10,000 kw eng., 44.2 million kwh; pur. 338 million kwh; rev. $7,655,680.

ST. GEORGE, City of, Utilities, 175 E. 200 North, 84770, 801/673-3593, Rudger M. McArthur, dir. of utils., (1942); 4,400 met.; gen. 5,450 kw; 5,100 kw eng., 350 kw hydro; 2 million kwh; pur. 136.4 million kwh; rev. $2,441,947.

SALEM Mun. Light & Power System, 30 W. 100 S., 84653, 801/798-7442, Allen D. Woodhouse, mgr. (1922); 400 met.; no gen.; pur. 2.1 million kwh; rev. $42,000.

SPANISH FORK Mun. Electric System, 386 N. Main St., 84660, 801/798-3568, William F. Bonner, mgr.; 2,300 met.; no gen.; pur. 20 million kwh.

SPRING CITY Light & Power System, 84662, 801/462-2244, Robert Alfred, mgr. gen. 300 kw hydro, 800,000 kwh; pur. 1.9 million kwh.

SPRINGVILLE Mun. Corp., 50 S. Main 84663, 801/489-4468, Charles M. Monney, mgr. (1906); 3,000 met.; gen. 920 kw hydro, 4.9 million kwh; pur. 21.2 million kwh; rev. $585,300.

STRAWBERRY WATER USERS ASSN., Payson, Utah, 84551, Mont Taylor, mgr.

VERMONT

BARTON Village, Inc., 05822, 802/525-6539, Orra White, supt.; 675 met.

BURLINGTON Electric Light Dept., 585 Pine St., 05401, 802/658-0300, Robert C. Young, supt. (1905); 14,857 met.; gen. 58,000 kw, 30,000 kw steam, 28,000 kw gas turbine, 28.7 million kwh; pur. 312.1 million kwh; rev. $9,497,556.

ENOSBURG FALLS Water & Light Dept., 05450, 802/933-4443, Garnet L. Harvey, chmn., bd. of commissioners, (1920); 979 met.; gen. 1,620 kw, 900 kw eng., 720 kw hydro, 4.3 million kwh; pur. 10.9 million kwh; rev. $479,370.

HARDWICK Electric Light Dept., N. Main St., Box 516, 05843, 802/472-5201, Rupert W. Peake, supt.; 3,181 met.; gen. 1,400 kw, 800 kw hydro, 600 kw eng., 3 million kwh; pur. 23.4 million kwh; rev. $804,954.

HYDE PARK Village, Inc., Box 37, 05655, 802/888-2310, Clayton E. Knowlton, chrm., bd. of trustees (1895); 657 met.; no gen.; pur. 7.9 million kwh; rev. $275,039.

JACKSONVILLE Electric, 05342, 802/368-7746, Howard M. Bemis, comm. (1921); 400 met.; no gen.; pur. 3.1 million kwh; rev. $107,190.

JOHNSON Elec. & Light Dept., 05656, 802/635-2301, Kenneth Phelps, supt.; 350 met.; no gen.; pur. 14.8 million kwh; rev. $279,302.

LUDLOW Electric Light Dept., Municipal Bldg., Box 289, 05149, 802/228-7766, Howard Barton, supt.; 1,260 met.; no gen.; pur. 19.3 million kwh; rev. $427,106.

LYNDONVILLE Mun. Electric Plant, 24 Main St., 05851, 802/626-3366, Kenneth C. Mason, mgr. (1896); 3,400 met.; gen. 2,350 kw hydro, 4.2 million kwh; pur. 39.6 million kwh; rev. $1,698,581.

MORRISVILLE Water & Light Dept., 18 Portland St., Box 325,

05661, 802/888-3348, Robert B. Page, supt. (1894); 2,550 met.; gen. 2,900 kw; 12.1 million kwh; pur. 30.6 million kwh; rev. $1,464,783.

NORTHFIELD Electric Dept., 26 S. Main St., 05663, 802/485-5411, Wallace Wheeler, acting supt. (1895); 1,500 met.; no gen.; pur. 21.2 million kwh; rev. $675,000.

ORLEANS Village, Inc., Main St., 05860, 802/754-8584, Slayton R. Marsh, supt. (1925); 614 met.; no gen.; pur. 13 million kwh; rev. $307,630.

READSBORO Electric Light Dept., Tunnel St., 05450, 802/423-7740, Robert Berard, supt.; 200 met.; no gen.; pur. 1.6 million kwh; rev. $38,906.

SPRINGFIELD, Town of, 05156, 802/885-2582, John Parker; **(Organized 1975, no retail distribution yet.)**

STOWE Village, Inc., 05672, 802/253-7215, Richard Wilkins, supt.; 2,750 met.; no gen.; pur. 30.4 million kwh; rev. $597,942.

SWANTON Village Elec. Dept., 100 Grand Ave., 05488, 802/868-3397, Orman E. Croft, village mgr. (1894); 2,313 met.; gen. 4,000 kw hydro, 17.9 million kwh; pur. 23 million kwh; rev. $1,172,571.

VIRGINIA

BEDFORD Mun. Electric Dept., 215 E. Main St., Box 807, 24523, 703/586-8963, J. C. Krantz, supt. (1890); 4,300 met.; gen. 1,212 kw hydro, 7.5 million kwh; pur. 113.8 million kwh; rev. $2,900,000.

BLACKSTONE, Town of, 100 W. Elm St., 23824, 804/292-7251, Richard H. Lee, town mgr. (1927); 1,700 met.; pur. 28 million kwh; rev. $1,274,155.

BRISTOL Utilities Board, 300 Lee St., 24201, 703/669-4112, Thomas E. Adams, gen. mgr. (1945); 12,773 met.; no gen.; pur. 411.2 million kwh; rev. $12,614,415. (TVA power distributor)

CULPEPER Mun. Electric Plant, 118 W. Davis St., 22701, 703/825-4700, J. A. Brookes, elec. supt. (1934); 1,311 met.; gen. 6,616 kw, 1,600 kw gas turbine, 5016 kw eng., 4.7 million kwh; pur. 18.3 million kwh.

DANVILLE Electric Dept., Mun. Bldg., Patton St., 24541, 804/799-5270, Eldred C. Yerks, dir. (1885); 36,600 met.; gen. 10,000 kw hydro, 71.8 million kwh; pur. 467.1 million kwh; rev. $20,021,600.

ELKTON Town Utilities, 106 N. Terrace Ave., 22827, Gerald K. Monger, supt.; 720 met.; no gen.; pur. 12 million kwh.

FRANKLIN Electric Dept., Box 179, 23851, 804/562-4188, Spurgeon R. Spivey, dir. of pub. util. (1889); 3,893 met.; no gen.; pur. 79.1 million kwh; rev. $3,230,000.

FRONT ROYAL Electric Dept., Box 1560, 22630, 703/635-3111, Charles W. Fristoe, Jr., supt. (1894); 4,500 met.; no gen.; pur. 71.2 million kwh; rev. $2,486,159.

HARRISONBURG Electric Comm., 87 W. Bruce St., 22801, 703/434-5361, Kenneth L. Frantz, gen. mgr. (1957); 7,650 met.; no gen.; pur. 232.5 million kwh.; rev. $9,400,000.

IRON GATE Electric Dept., 24448, E. E. Larman, mayor; 238 met.; pur. 2.1 million kwh.

MANASSAS, City of, Box 512, 22110, 703/361-4104, C. M. Moyer, Jr., city mgr. (1912); 4,870 met.; gen. 4,000 kw eng.; pur. 85 million kwh.; rev. $4,709,213.

MARTINSVILLE, City of, Electric Dept., 55 W. Church St., 24112, 703/638-3971, Robert I. Corekin, dir., 7,265 met.; gen. 1,300 kw hydro, 5.5 million kwh; pur. 163.6 million kwh.

RADFORD Electric Dept., 98 Wadsworth St., 24141, 703/639-3011, Robert Asbury, city mgr. (1930); 3,952 met.; gen. 1,000 kw hydro, 4 million kwh; pur. 114.4 million kwh; rev. $1,915,894.

RICHLANDS Water & Light Dept., 217 Railroad Ave., 24641, 703/963-5135, C. P. Mahaffey, town mgr.; 2,000 met.; no gen.; pur. 21 million kwh; rev. $354,489.

RICHMOND Dept. of Public Utilities, 900 E. Broad St., 23219, 804/780-4884, C. F. Wilkinson, Jr., dir. (1910); gen. 3,600 kw hydro, 14.4 million kwh; pur. 58.7 million kwh; rev. $2,171,448. (Municipal use only.)

SALEM Mun. Electric Light Dept., 736 W. Main St., Box 869, 24153, 703/389-8601, Ext. 56, Reginald A. Oliver, supt. (1891); 9,973 met.; no gen.; pur. 202.3 million kwh; rev. $7,167,037.

WAKEFIELD, Box 545, 23888, Marvin C. Stephenson, supt. util.; 550 met.; no gen.; pur. 7.7 million kwh; rev. $88,499.

WASHINGTON

(Public Utility Districts, abbreviated PUD, are listed alphabetically by county names.)

BENTON COUNTY PUD No. 1, Box 6270, Kennewick, Wash. 99336, 509/582-2175, Robert W. Blodgett, mgr. (1946); 30,000 met.; no gen.; pur. 1,355.7 million kwh; rev. $15,188,286.

BLAINE City Light, City Hall, Box 490, 98230, 206/332-8311, H.B. Bonallo, mayor, (1908); 1,597 met.; no gen.; rev. $561,326.

CASHMERE Water, Sewer & Light Dept., 101 Woodring St., 98815, 509/782-3513, David L. Simmer, supt. (1908); 1,016 met.; no gen.

CENTRAL WASHINGTON POWER AGENCY, 301 N. Main St., Box 218, Ellensburg, Wash., 98926, 509/925-2691. Established 1962 by Grant and Kittitas PUDs.

CENTRALIA City Light Dept., 1100 N. Tower Ave., 98531, 206/736-7611, Melvin C. Lindeman, supt. (1895); 7,140 met.; gen. 10,000 kw hydro, 79.2 million kwh; pur. 109 million kwh; rev. $1,974,418.

CHELAN COUNTY PUD No. 1, 327 N. Wenatchee Ave., Box 1231, Wenatchee, Wash., 98801, 509/663-8121, Walter R. Woirol, mgr. (1948); 26,179 met.; gen. 1,966,100 kw, 1,965,700 kw hydro, 400 kw eng., 7,984.4 million kwh; pur. 368.4 million kwh; rev. $49,022,812.

CHENEY Light Dept., 609 Second St., 99004, 509/235-6211, Cecil Charlton, supervisor (1931); 2,608 met.; no gen.; pur. 92.9 million kwh; rev. $663,227.

CHEWELAH Light Dept., 102 Webster Ave., 99109, 509/935-8311, Fred Nussbaum, util. supervisor (1907); 939 met.; no gen.; pur. 8.3 million kwh; rev. $105,240.

CLALLAM COUNTY PUD No. 1, Box 1117, Port Angeles, Wash., 98362, 206/452-9771, Phillip K. Jackson, mgr. (1944); 17,641 met.; no gen.; pur. 429.6 million kwh; rev. $6,228,874.

CLARK COUNTY PUD No. 1, 1200 Fort Vancouver Way, Box 1626, Vancouver, Wash., 98668, 206/699-3000, Dale R. Merrell, gen. mgr. (1942); 77,000 met.; no gen.; pur. 2,586.6 million kwh; rev. $30,000,000.

COULEE DAM Light Dept., City Hall, 99116, 509/633-0320, Donald E. Thoren, supt. (1959); 555 met.; no gen.

COWLITZ COUNTY PUD No. 1, 960 Commerce Ave., Longview, Wash., 98632, 206/423-2210, Robert L. McKinney, gen. mgr. (1936); 36,000 met.; gen. 70,000 kw hydro, 211.8 million kwh; pur. 3,535.1 million kwh; rev. $21,349,468.

DOUGLAS COUNTY PUD No. 1, 1151 Valley Mall Pkwy., East Wenatchee, Wash., 98801, 509/884-7191, Fred W. Lieberg, mgr. (1936); 10,000 met.; gen. 800,000 kw hydro, 3,496.7 million kwh; pur. 662.2 million kwh; rev. $21,265,955.

DUPONT, Town of, 98327, 206/964-8121, Pola A. Andre, clerk-treas. (1951); 184 met.; no gen.

EATONVILLE Power & Light Co., Box 309, 98328, 206/832-3361, Joe Sander, supt. (1913); 420 met.; no gen.

ELLENSBURG City Light, 420 N. Pearl St., 98926, 509/962-9863, Robert H. Walker, city mgr., (1899); 4,999 met.; no gen.; pur. 146.2 million kwh; rev. $1,629,000.

FERRY COUNTY PUD No. 1, Box 324, Republic, Wash., 99166, 509/775-3325, Kenneth R. Coyle, mgr. (1936); 2,022 met.; no gen.; pur. 62 million kwh; rev. $1,105,984.

FIRCREST, Town of, 115 Ramsdell St., Tacoma, Wash., 98466, 206/564-8900, Wayne D. Mayhall, dir. pub. wks. (1929); 2,105 met.; no gen.; pur. 42.1 million kwh; rev. $550,000.

FRANKLIN COUNTY PUD No. 1, 1411 W. Clark, Box 2407, Pasco, Wash., 99302, 509/547-5591, Kenneth R. Engstrom, mgr. (1947); 14,652 met.; no gen.; pur. 574.7 million kwh; rev. $7,285,235.

GRANT COUNTY PUD No. 2, 30 C St., SW, Box 878, Ephrata, Wash., 98823, 509/754-3541, Larry D. Peterson, mgr. (1942); 26,316 met.; gen. 1,619,750 kw hydro, 9,862.3 million kwh; pur. 201.9 million kwh; rev. $19,488,647.

GRAYS HARBOR COUNTY PUD No. 1, 2720 Sumner Ave., Box 480, Aberdeen, Wash., 98520, 206/532-4220, Ferris G. Gilkey, gen. mgr. (1940); 35,295 met.; 56,000 kw steam; 293.8 million kwh; pur. 1,315.7 million kwh; rev. $16,469,033.

KITTITAS COUNTY PUD No. 1, 1400 E. Vantage Hgwy., Ellensburg, Wash., 98926, 509/925-3164, Floyd M. Weir, mgr. (1936); 1,545 met.; no gen.; pur. 41.7 million kwh; rev. $588,494.

KLICKITAT COUNTY PUD No. 1, 1313 S. Columbus, Goldendale, Wash., 98620, 509/773-5891, John H. Budd, gen. mgr. (1938); 7,388 met.; no gen.; pur. 240.9 million kwh; rev. $3,165,120.

LEWIS COUNTY PUD No. 1, 321 N. W. Pacific Ave., Chehalis, Wash., 98532, 206/748-9261, Gary H. Kalich, mgr. (1936); 18,990 met.; no gen.; pur. 664.7 million kwh; rev. $7,056,052.

MASON COUNTY PUD No. 1, Rte. 5, Box 555, Shelton, Wash. 98584, 206/877-5249, John P. Robertson, mgr. (1946); 3,143 met.; no gen.; pur. 58.9 million kwh; rev. $892,376.

MASON COUNTY PUD No. 3, Third and Cota St., Box 490,

Shelton, Wash., 98584, 206/426-8255, Richard D. Holland, mgr. (1939); 15,452 met.; no gen.; pur. 332.8 million kwh; rev. $4,027,507.

McCLEARY Light and Power, City Hall, Box 360, 98557, 206/495-3667, Roy Thumser, supt. public works (1944); 695 met.; no gen.; pur. 24.2 million kwh; rev. $215,454.

MILTON, Town of, 1111 Laurel St., Box 578, 98354, 206/922-8733, Robert J. Smart, supt. of public works (1941); 1,000 met.; no gen.; pur. 18.4 million kwh; rev. $160,000.

OKANOGAN COUNTY PUD No. 1, Box 912, Okanogan, Wash., 98840, 509/422-3310, Harold T. Brazil, mgr. (1945); 15,300 met.; no gen.; pur. 496.5 million kwh; rev. $5,228,044.

PACIFIC COUNTY PUD No. 2, 405 Duryea St., Box 472, Raymond, Wash., 98577, 206/942-2411, John E. Dunsmoor, mgr. (1940); 11,941 met.; no gen.; pur. 229.1 million kwh; rev. $2,901,148.

PEND OREILLE COUNTY PUD No. 1, Box 190, Newport, Wash., 99156, 509/447-3137, George Kennett, mgr. (1936); 3,250 met.; gen. 77,800 kw hydro, 485 million kwh; rev. $2,850,000.

PORT ANGELES Light and Power Dept., 140 W. Front St., Box 711, 98362, 206/457-0411, T. G. Honnold, supt. (1893); 7,330 met.; no gen.; pur. 204.8 million kwh; rev. $1,750,000.

RICHLAND Energy Services Dept., Box 190, 99352, 509/943-9161, J. Keith Sedore, energy services dir. (1958); 14,712 met.; no gen.; pur. 521.6 million kwh; rev. $5,600,000.

RUSTON Electric Utility, Town Hall, 5117 N. Winnifred St., Ruston (Tacoma), Wash., 98407, 206/759-3544, Hubert Glenn Roberts, supt. (1928); 290 met.; no gen.; pur. 4.8 million kwh; rev. $66,944.

SEATTLE City Light, 1015 Third Ave., 98104, 206/625-3000, L. Joe Miller, actg. supt.,(1910); 318,259 met.; gen. 1,407,000 kw; 1,381,000 kw hydro, 26,000 kw steam; 5,041.3 million kwh; pur. 3,313.6 million kwh; rev. $86,056,748.

SKAMANIA COUNTY PUD No. 1, Box 500, Carson, Wash. 98610, 509/427-5126, William F. Yee, mgr. (1938); 4,000 met.; no gen.; pur. 123.8 million kwh; rev. $1,867,377.

SNOHOMISH COUNTY PUD No. 1, Box 1107, Everett, Wash., 98206, 206/258-8211, William G. Hulbert, Jr., mgr. (1947); 141,000 met.; gen. 1,313,000 kw steam; 516.8 million kwh; pur. 4,813.3 million kwh; rev. $14,214,475.

STEILACOOM, Town of, 1715 Lafayette St., Box M, 98388, 206/588-3490, Bert Pettitt, town admin. (1914); 1,893 met.; no gen.; pur. 19.9 million kwh; rev. $250,000.

SUMAS, Town of, Cherry St., Box 5, 98295, 206/988-4713, Stephen R. Koehler, util. supt.; 351 met.; no gen.; pur. 4.5 million kwh; rev. $56,182.

TACOMA Dept. of Public Utils., Light Div., P.O. Box 11007, 98411, 206/383-2471, James E. Thompson, supt. (1893); 103,000 met.; gen. 771,700 kw; 659,700 kw hydro, 112,000 kw steam; 2,020 million kwh; pur. 2,833.9 million kwh; rev. $64,982,325.

VERA WATER AND POWER DISTRICT, No. 15, 601 N. Evergreen Rd., Veradale, Wash., 99037, 509/924-3800, Joseph W. Custer, gen. mgr. (1906); 4,770 met.; no gen., pur. 146.3 million kwh; rev. $1,468,945.

WAHKIAKUM COUNTY PUD No. 1, Box 248, Cathlamet, Wash., 98612, 206/795-3266, Francis Longo, mgr. (1940); 1,716 met.; no gen.; pur. 45.3 million kwh; rev. $768,504.

WATERVILLE, Town of, Box 580, 98858, 509/745-3271, C. A. Smith, supt.; (1902); 450 met.; no gen.; pur. 13.9 million kwh; rev. $245,000.

WHATCOM COUNTY PUD, 215 Mason Bldg., Bellingham, Wash., 98225, 206/733-5810, Robert E. Ebright, president, 619 Bayside Rd., Bellingham, 98225 (1954); serves one industry; no gen.

WEST VIRGINIA

NEW MARTINSVILLE Mun. Utilities, City Bldg., 26155, Lewis Ingold, ch. lineman; 1,800 met.; no gen.; pur. 11.2 million kwh; rev. $272,076.

PHILIPPI Mun. Electric Light Dept., 108 N. Main St., 26416, Joseph P. Mattaliano, city mgr.; 1,242 met.; no gen.; rev. $300,000.

WISCONSIN

ALGOMA Utility Comm., 520 Parkway Ave., 54201, 414/487-5556, Roland C. LeCloux, supt. (1903); 1,739 met.; no gen.; pur. 29.7 million kwh; rev. $1,140,859.

ARCADIA Electric Utility, 115 S. Jackson St., 54612, 608/323-7347, Ronald L. Darbo, supt. (1903); 1,105 met.; gen. 6,143 kw eng., 1.1 million kwh; pur. 21.1 million kwh; rev. $909,043.

ARGYLE Mun. Electric & Water Dept., 53504, 608/543-6611, Robert A. Flint, supt.; 600 met.; gen. 500 kw eng.

BANGOR Mun. Utility, 54614, 608/486-2151, Michael Meyer, mgr.; 840 met.; no gen.

BARRON Light & Water Dept., 1303 E. Division Ave., 54812, 715/537-3855, David Hoff, supt. (1908); 1,307 met.; gen. 5,252 kw, 5,060 kw eng., 192 kw hydro, 1.8 million kwh; pur. 22.3 million kwh; rev. $908,513.

BELMONT Mun. Light & Water Utility, Mound Ave., 53510, 608/762-5142, Tom Buss, supt. (1900); 504 met.; no gen.; pur. 3.4 million kwh; rev. $72,931.

BENTON Elec. & Water Utility, 53803, 608/759-3721, Tom Frazier, supt.

BLACK EARTH Utilities, 1210 Mill St., 53515, 608/767-3322, Jon Zimmerman, supt.

BLACK RIVER FALLS Mun. Electric Utilities, 119 N. Water St., 54615, 715/284-9463, Delmar D. Dahl, utility adm., (1904); 2,168 met.; gen. 4,140 kw, 3,210 kw eng., 930 kw hydro, 4.9 million kwh; pur. 31.4 million kwh; rev. $956,171.

BLOOMER Electric & Water, 1503 Main St., 54724, 715/568-3331, Charles H. Cole, mgr. (1902); 1,304 met.; no gen.; pur. 19.5 million kwh; rev. $290,863.

BOSCOBEL Utility Comm., 1013 Wisconsin Ave., 53805, 608/375-5429, Al Mezera, supt.; 1,300 met.; no gen.; pur. 15.9 million kwh; rev. $296,307.

BRODHEAD Water & Lighting Commission, 1108 11th St., 53520, 608/897-2505, Carrol Scheafor, supt. (1913); 1,532 met.; no gen.; pur. 21.9 million kwh; rev. $777,701.

CADOTT Light & Water Dept., Village Hall, Box 37, 54727, 715/289-4282, Richard Carlson, supt.

CASHTON Mun. Light & Water Utility, 709 Main St., 54619, 608/386-5160, John Houser, actg. supt. (1909); 641 met.; gen. 1,913 kw eng., 51,985 kwh; pur. 4 million kwh; rev. $77,299.

CEDARBURG Light & Water Utilities, 320 E. Zeunert, Box 82, 53012, 414/377-1280, Glenn W. Frank, mgr. (1901); 3,878 met.; gen. 6,000 kw eng., 14.8 million kwh; pur. 68.4 million kwh; rev. $2,169,323.

CENTURIA Mun. Electric Utility, 54824, 715/646-2300, Glenn Melin, pres., (1946); 374 met.; no gen.; pur. 4.1 million kwh; rev. $153,894.

CLINTONVILLE Water & Electric, 65 E. Twelfth St., Box 359, 54929, 715/823-3518, John H. Schroeder, supt.; 3,400 met.; no gen.; pur. 33 million kwh.

COLUMBUS Water & Light Dept., 361 N. Water St., 53925, 414/623-3100, Grant E. Allar, supt. (1899); 1,928 met.; no gen.; pur. 34.2 million kwh; rev. $1,283,517.

CORNELL Mun. Lighting Dept., 54732, 715/239-6522, Russell M. Ellingson, mgr.; 600 met.; no gen.; pur. 5 million kwh.

CUBA CITY Mun. Light & Water, 108 N. Main, 53807, 608/744-2152, John Sauer, city coordinator (1921); 820 met.; no gen.; pur. 12.1 million kwh; rev. $499,618.

CUMBERLAND Mun. Utility, 54829, 715/822-5671, Charles Christensen, gen. mgr. (1898); 1,111 met.; gen. 4,723 kw eng., 2.8 million kwh; pur. 11.9 million kwh; rev. $334,254.

DEERFIELD Electric & Water Util., Village Hall, 113 N. Main, 53531, 608/764-5757, Allan Eberhardt, supt. (1930); 486 met.; no gen.; rev. $166,000.

EAGLE RIVER Light & Water Comm., City Hall, 54521, 715/479-8121, T. G. Shields, mgr. (1912); 1,073 met.; no gen.; pur. 10.6 million kwh; rev. $197,338.

ELKHORN Light & Water Comm., 23 W. Walworth Ave., 53121, 414/723-2910, Anthony F. Biba, supt. (1898); 2,242 met.; no gen.; pur. 47.6 million kwh; rev. $1,402,422.

ELROY Light & Water Utility, 102 Liberty St., Box 40, 53929, 608/462-8245, Alice Brooks, clerk (1899); 920 met.; gen. 2,725 kw eng., 896,604 kwh; pur. 8.9 million kwh; rev. $297,870.

EVANSVILLE Water & Light Dept., 31 S. Madison St., 53536, 608/882-4422, Wayne E. Ballard, mgr.; 1,600 met.; no gen.

FENNIMORE Mun. Electric Utility, 860 Lincoln Ave., 53809, 608/822-6119, Charles J. Leuck, dir. public wks. (1904); 1,071 met.; gen. 2,132 kw eng., 1.7 million kwh; pur. 16.4 million kwh; rev. $582,924.

FLORENCE Water & Light Comm., 501 Spring St., Box 67, 54121, 715/528-3330, Robert Friberg, supt. (1898); 903 met.; no gen.; pur. 6.9 million kwh; rev. $220,901.

FOOTVILLE Water & Electric Comm., Center St., 53527, 608/876-9581, Dale Kitelinger, supt.; 380 met.; no gen.; pur. 2 million kwh; rev. $47,000.

GRESHAM Mun. Light Plant, Main St., Box 157, 54128, 715/787-3244, Alvin Christ, supt. (1918); 817 met.; gen. 600 kw, hydro, 4.4 million kwh; pur. 4.7 million kwh; rev. $327,138.

HARTFORD Electric, 109 N. Main St., Box 3, 53027, 414/673-4000, L. M. Darin, dir. (1912); 2,820 met.; no gen.; pur. 57.8 million kwh; rev. $1,728,000.

HAZEL GREEN Electric Utility, Box 367, 53811, 608/854-2953; 478

met.; no gen.; pur. 5.7 million kwh; rev. $232,299.

HUSTISFORD Electric Utility, 53034, 414/349-3650, Steve Thompson, supt.; 750 met.; no gen.; pur. 6 million kwh.

JEFFERSON Water & Electric Dept., 121 W. Racine St., 53549, 414/674-3313, H. R. Waraczynski, mgr., (1901); 3,174 met.; no gen.; pur. 85.8 million kwh; rev. $2,412,000.

JUNEAU Comm. of Public Works, S. Mill St., Box 163, 53039, 414/386-3321, 863 met.; no gen.; pur. 18.8 million kwh; rev. $605,000.

KAUKAUNA Electric & Water Dept., 777 Island St., 54130, 414/766-5721, Ernest J. Mullen, gen. mgr. (1912); 8,073 met.; gen. 41,000 kw, 20,000 kw gas turbine, 15,000 kw hydro, 6,000 kw eng., 112.7 million kwh; pur. 368.4 million kwh; rev. $10,041,647.

KIEL Utilities, City Hall, 621 Sixth St., Box 98, 53042, 414/894-2669, Ralph H. Menne, supt. (1914); 1,456 met.; no gen.; pur. 23.2 million kwh; rev. $406,389.

LA FARGE Mun. Electric Co., Main St., 54639, 608/625-2333; 631 met.; gen. 419 kw, 299 kw eng., 120 kw hydro, 280,100 kwh; pur. 2.9 million kwh; rev. $58,583.

LAKE MILLS Light & Water Dept., 103 Church St., 53551, 414/648-2344, Thomas George Popp, Jr., city mgr. (1911); 1,300 met.; no gen.; rev. $1,270,000.

LODI Mun. Light & Water Plant, City Hall, 113 S. Main St., 53555, 608/592-3246, Rodney Maier, supt.(1894); 967 met.; no gen.; pur. 12.5 million kwh; rev. $478,019.

MANITOWOC Public Utilities, 1303 S. Eighth St., 54220, 414/682-0366, Edmund J. Garber, gen. mgr. (1914); 14,222 met.; gen. 69,000 kw steam, 70 million kwh; pur. 195.4 million kwh; rev. $9,485,922.

MARSHFIELD Electric & Water Dept., 2000 S. Roddis Ave., 54449, 715/387-1195, Robert R. Pawelski, mgr. (1904); 9,068 met.; gen. 39,000 kw steam, 111.4 million kwh; pur. 111.9 million kwh; rev. $7,770,918.

MAZOMANIE Light & Water Dept., Village Hall, Crescent St., 53560, 608/795-2556, Dean G. Sanftleben, supt.

MEDFORD Electric Utility, 330 S. Whelen Ave., 54451, 715/748-3211, William J. Werner, mgr. (1944); 2,150 met.; no gen.; pur. 43.1 million kwh; rev. $1,073,117.

MENASHA Electric & Water Utilities, Box 340, 54952, 414/729-5177, James W. Austin, gen. mgr. (1905); 6,338 met.; gen. 28,980 kw; 28,680 kw steam, 300 kw eng., 54.1 million kwh; pur. 68.8 million kwh; rev. $4,449,002.

MERRILLAN Electric Light & Water Dept., Pearl and Wisconsin Sts., 54754, 715/333-5377, George Geisler, supt. (1902); 300 met.; gen. 237 kw, 162 kw eng., 75 kw hydro, 392,630 kwh; pur. 1.5 million kwh.

MT. HOREB Electric Utility, Lincoln St., 53572, 608/437-3677, Elwin K. Bendickson, mgr.; 1,400 met.; no gen.

MUSCODA Light & Water Comm., 109 N. Second St., 53573, 608/739-3390, Joseph H. Drone, supt.; (1907); 843 met.; no gen; pur. 12.3 million kwh.; rev. $483,600.

NEW GLARUS Mun. Light & Water Works, 213 2nd St., 53574, 608/527-2913, Orville R. Jorenby, supt. (1902); 796 met.; no gen.; pur. 12.3 million kwh; rev. $406,324.

NEW HOLSTEIN Public Utils., 2110 Washington St., 53061, 414/898-5776, Ernest R. Dyer, Sr., supt. (1912); 1,830 met.; no gen.; pur. 46.6 million kwh; rev. $1,572,278.

NEW LISBON Mun. Light & Water Dept., 218 E. Bridge St., 53950, 608/562-3103, Fred J. Lorenz, supt.; 600 met.; gen. 2,000 kw eng.

NEW LONDON Utility, 400 E. North Water St., 54961, 414/982-2650, Robert S. Houk, mgr. (1903); 2,722 met.; no gen.; pur. 94.5 million kwh; rev. $2,812,587.

NEW RICHMOND City Utilities, 156 E. First St., 54017, 715/246-4167, Donald E. Preble, admr. (1890); 1,962 met.; no gen.; pur. 36.3 million kwh; rev. $1,031,091.

OCONOMOWOC Utilities, 630 S. Worthington St., 53066, 414/567-5483, Robert W. Nettnin, dir. of utils., (1901); 5,650 met.; no gen.; pur. 113 million kwh; rev. $3,671,500.

OCONTO FALLS Water & Light Comm., City Hall, 104 S. Franklin St., Box 70, 54154, 414/846-2525, George Barber, dir. pub. wks. (1933); 1,069 met.; no gen.; pur. 14.9 million kwh; rev. $391,729.

PARDEEVILLE Electric Comm., 124 Lake St., 53954, 608/429-3054, Verland Schultz, mgr. (1945); 892 met.; gen. 29,775 kw hydro; 63,200 kwh; pur. 9.7 million kwh; rev. $379,516.

PLYMOUTH Utilities, 12 S. Milwaukee St., Box 267, 53073, 414/893-1471, Chester J. Harrison, mgr. (1901); 4,940 met.; no gen.; pur. 93.2 million kwh; rev. $3,005,453.

PRAIRIE DU SAC Water & Light Dept., 560 Park Ave., 53578, 608/643-3133, Duane Browning, supt.; 680 met.; no gen.; pur. 5.4 million kwh; rev. $116,000.

PRINCETON Utilities, 438 W. Main St., 54968, 414/295-6612, Duane G. Norem, city clerk & util. mgr. (1935); 888 met.; no gen.; pur. 9 million kwh; rev. $345,346.

REEDSBURG Utility Comm., 344 S. Willow, 53959, 608/524-4381, Robert D. Utley, supt. (1894); 2,773 met.; no gen.; pur. 69.6 million kwh; rev. $2,275,604.

RICE LAKE Elec. Util., 35 W. Allen St., 54868, 715/234-7004, John E. Brandt, supt.; 3,800 met.; no gen.; pur. 60 million kwh; rev. $1,472,184.

RICHLAND CENTER, Box 29, 53581, 608/647-4448, Richard J. Steiner, util. admr., (1904); 2,675 met.; gen. 11,500 kw steam, 28.6 million kwh; pur. 34.5 million kwh; rev. $2,516,856.

RIVER FALLS Mun. Utilities, 115 E. Elm St., 54022, 715/425-5313, Elmer K. Thon, Jr., util. adm. (1900); 3,000 met.; gen. 13,159 kw, 12,859 kw. eng., 300 kw hydro; 20.3 million kwh; pur. 37.6 million kwh; rev. $2,397,422.

SAUK CITY Electric & Water Dept., 507 Van Buren St., 53583, 608/643-8336, Donald Moen, supt. (1909); 1,236 met.; no gen.; pur. 20.5 million kwh; rev. $822,836.

SHAWANO Mun. Utilities, 122 N. Sawyer St., 54166, 715/526-3131, Lee A. Ebert, supt. (1900); 3,930 met.; no gen.; pur. 100 million kwh; rev. $3,181,000.

SHEBOYGAN FALLS Utilities, 511 Adams St., 53085, 414/467-6446, Robert Selchert, supt. (1916); 2,600 met.; no gen.; pur. 84.5 million kwh; rev. $2,773,038.

SHULLSBURG Electric Utility, 112 S. Gratiot St., 53586, 608/965-4901, Harrison Craig, dir. public works (1937); 651 met.; no gen.; pur. 7.1 million kwh; rev. $185,809.

SLINGER Electric Light & Water Dept., 110 Oak St., 53086, 414/644-5515, James S. Dickinson, supt.; 521 met.; no gen.

SPOONER Mun. Electric Utility, City Hall, 54801, 715/635-2327, Robert J. La Page, supt.; no gen.

STOUGHTON Electric Utility, 211 Water St., Box 383, 53589, 608/873-3379, Robert P. Kardasz, dir. of public works, (1890); 5,084 met.; no gen.; 64.5 million kwh; rev. $2,748,297.

STRATFORD Electric, 54484, 715/687-4118, W. F. Lange, supt. (1920); 562 met.; no gen.; pur. 6.9 million kwh; rev. $311,527.

STURGEON BAY Utilities, 30 S. Third Ave., Box 249, 54235, 414/743-5542, William Baudhuin, supt. (1904); 5,543 met.; no gen.; pur. 75.9 million kwh; rev. $2,498,206.

SUN PRAIRIE Electric Utility, 125 W. Main St., 53590, 608/837-5500, George F. Straus, supt. (1912); 5,206 met.; no gen.; pur. 79.7 million kwh; rev. $2,965,690.

TREMPEALEAU Mun. Electric Dept., 50 E. Third St., 54661, 608/534-6434 (1915); 515 met.; no gen.; pur. 4.3 million kwh; rev. $90,415.

TWO RIVERS Water & Light Dept., Box 87, 54241, 414/793-1191, William C. Pappathopoulos, dir. util. (1901); 5,509 met.; no gen.; pur. 67.8 million kwh; rev. $2,683,142.

VIOLA Mun. Electric Utility, 54664, 608/627-1829; Gray Jones, actg. supt., 474 met.; gen. 1,000 kw eng.

WATERLOO Water & Light Comm., 122 S. Monroe St., 53594, 414/478-2260, James W. Sellnow, supt. (1918); 1,500 met.; no gen.; pur. 22.2 million kwh; rev. $373,407.

WAUNAKEE Utilities, 53597, 608/849-4111, Kenneth L. Fredrickson, supt. (1919); 1,550 met.; no gen.; pur. 30.1 million kwh; rev. $1,143,534.

WAUPUN Public Utilities, 220 N. Forest St., 53963, 414/324-3556, Albert F. Leu, mgr. (1894); 3,133 met.; no gen.; pur. 51.1 million kwh; rev. $1,913,999.

WESTBY Electric & Water Utility, 104 First St., 54667, 608/634-3416, Dean Warren, supervisor (1902); 818 met.; no gen.; pur. 13.8 million kwh; rev. $395,510.

WHITEHALL Electric Utility, 1631 Main St., 54773, 715/538-4353, Larry H. Bocock, elec. supt. & mgr., (1940); 825 met.; no gen.; pur. 16.9 million kwh; rev. $519,203.

WISCONSIN DELLS Electric Utility, 53965, 608/253-2542, Kenneth D. Weber, dir. public. wks. (1894); 1,599 met.; no gen.; pur. 24.6 million kwh; rev. $1,002,190.

WISCONSIN RAPIDS Water Works & Lighting Comm., 221 Sixteenth St., S., 54494, 715/423-6300, Robert F. Dickinson, gen. mgr. (1890); 9,534 met.; no gen.; pur. 142.4 million kwh, rev. $4,203,937.

WONEWOC Mun. Water & Light Dept., City Hall, 53968, 608/464-3114.

WYOMING

BASIN Mun. Light & Water Plant, Box 618, 82410, 307/568-2524, Frank Yoos, supt.; 700 met.; no gen.

CODY Light and Water Works, 1338 Rumsey Ave., 82414, 307/587-3171, Milford Bessey, supt. (1935); 2,400 met.; no gen.; pur. 23.2 million kwh; rev. $400,000.

DEAVER Utilities, 82421, S. E. Dillon, mgr.; 52 met.; no gen.

FORT LARAMIE, Town of, 82212; 108 met.

GILLETTE Utility Dept., Box 540, 82716, 307/682-3098, Glen W. Taylor, dir. pub. wks. (1915); 4,600 met.; no gen.; pur. 49.3 million kwh; rev. $985,549.

GUERNSEY Electric Dept., 82214; gen. 800 kw eng.

LINGLE, Town of, 82223, Robert Scoggan, supt.; 215 met.; no gen.; pur. 1.1 million kwh; rev. $25,417.

LUSK Light and Power Dept., Box 385, 82225, 307/333-3622, Roy Shimek, supt. pub. wks. (1919); 1,290 met.; gen. 640 kw eng.; pur. 8.7 million kwh; rev. $165,679.

PINE BLUFFS Light, Water & Power, 82082, 307/245-3746, Ronald Spier, supt.

POWELL Mun. Electric Distribution System, 270 N. Clark St., Box 1008, 82435, 307/754-5106, Clive Dillon, supt. (1921); 2,100 met.; no gen.; pur. 21.9 million kwh; rev. $525,951.

TORRINGTON Mun. Electric Dept., 336 W. Railroad, 82240, 307/532-2422, Lawrence Mitchell, supt. (1914); 2,995 met.; no gen.; pur. 32.6 million kwh; rev. $883,005.

UPTON Mun. Light & Power Dept., 82730, 307/468-2626, D. L. Eisenhauer, mayor (1948); 350 met.; no gen.; pur. 3.2 million kwh; rev. $85,279.

WHEATLAND Mun. Electric Dept., 607 Tenth St., 82201, 307/322-2962, Charles Parsons, mayor; 1,100 met.; no gen.; pur. 9.7 million kwh; rev. $318,000.

AMERICAN SAMOA

GOVERNMENT OF AMERICAN SAMOA Electric Utility Division, Pago Pago, American Samoa, 96799, 633-5251, John C. Reader, gen. mgr.; 4,700 met.; gen. 24,000 kw eng., 60 million kwh; pur. none; rev. $4,200,000.

CANAL ZONE

PANAMA CANAL CO. Electric Division, Box 2010, Balboa, Canal Zone, 52-3421, Frank A. Lee, chief, Electrical Division (1914); 6,200 met.; gen. 162,000 kw, 55,500 kw steam, 60,000 kw gas turbine, 46,500 kw hydro, 612.5 million kwh; pur. 52.9 million kwh; rev. $18,950,000.

GUAM

GUAM POWER AUTHORITY, P. O. Box 2977, Agana, Guam, 96910, 472-6801, Augusto S. Delgado, interim gen. mgr. (1968); 20,626 met.; gen. 300,500 kw, 280,500 kw steam, 20,000 kw eng., 1,017.2 million kwh; pur. none; rev. $21,212,000.

PUERTO RICO

PUERTO RICO ELECTRIC POWER AUTHORITY, Box 4267, San Juan, P. R., 00936, 809/723-0528, Carlos Galanes, dir. elec. sys., (1941); 945,250 met.; gen. 4,207,270 kw, 3,080,000 kw steam, 1,026,390 kw gas turbine, 2,500 kw eng., 98,380 kw hydro, 13,684.8 million kwh; pur. 361,920 kwh; rev. $650,182,772.

VIRGIN ISLANDS

VIRGIN ISLANDS WATER AND POWER AUTHORITY, Box 1492, Charlotte Amalie, St. Thomas, U. S. Virgin Islands, 00801, 809/774-3552, Thomas R. Blake, exec. dir. (1965); 37,119 met.; gen. 155,500 kw, 86,000 kw steam, 15,000 kw eng., 54,000 kw gas turbine, 264 million kwh; pur. none; rev. $29,921,401.

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ORGANIZATIONS OF LOCAL PUBLICLY OWNED SYSTEMS

NATIONAL ASSOCIATION

AMERICAN PUBLIC POWER ASSOCIATION, Suite 212, 2600 Virginia Ave., N.W., Washington, D.C. 20037, 202/342-7200, Alex Radin, exec. dir.; Earl F. Brush, Board of Water and Light, Lansing, Mich., pres.; William H. Corkran, Jr., Easton Utilities Commission, Easton, Md., pres.-elect; James E. Baker, Municipal Light Department, Shrewsbury, Mass., vice-pres.; Walter R. Woirol, Chelan County Public Utility District, Wenatchee, Wash., treas.

REGIONAL ASSOCIATIONS

COMMITTEE ON POWER FOR THE SOUTHWEST, Suite 3, 400 S. Broadway, Edmond, Okla. 73034, 405/340-1900, Michael McDowell, exec. dir.; Wayne DuBose, Jasper, Texas, chrm.; Walter E. Oestreich, Callaway Electric Co-op., Fulton, Mo., vice pres.; B. Dean Sanger, KAMO Electric Power Co-op., Inc., Venita, Okla., sec.-treas.

INTERMOUNTAIN CONSUMER POWER ASSOCIATION, Box BB, Sandy, Utah 84070, 801/566-3933, Dennis B. Horman, gen. mgr.; Harry Fieldsted, Altamount, Utah, pres.; Reece Nielsen, Hyrum, Utah, vice pres.; Ray Farrell, Heber, Utah, sec.; Ralph Robinson, Fillmore, Utah, treas.

MID-WEST ELECTRIC CONSUMERS ASSOCIATION, Suite 300, Executive Office Bldg., Box 910, Evergreen, Colo. 80439, 303/674-6676, Fred G. Simonton, exec. dir.; Gary Williamson, Central Power Electric Cooperative, Minot, N.D., pres.; Ron Richardson, Parker, S.D., vice pres.; Louis Stroup, Jr., McPherson, Kan., sec.-treas.

NORTHEAST PUBLIC POWER ASSOCIATION, Suite 104, 148 Linden St., Wellesley, Mass. 02181, 617/237-9126, Chapman Stockford, gen. mgr.; Harland Titemore, Burlington, Vt., pres.; James F. Hall, Mansfield, Mass., first vice pres.; William J. Wallace, Wakefield, Mass., sec.; William F. O'Connor, Taunton, Mass., treas.

NORTHWEST PUBLIC POWER ASSOCIATION, 1310 Main St., Box 1307, Vancouver, Wash. 98666, 206/694-6553, Norman C. Jacox, gen. mgr.; Joe Custer, Vera Water & Power, pres.; Wilbur Anderson, Vigilante Electric Coop., first vice pres.; Arvey Weeks, Lower Valley Power & Light, second vice pres.; Maxine Johnson, Northern Wasco PUD, sec.-treas.

SEMO-NEARK MUNICIPAL UTILITIES ASSOCIATION, City Light & Water, Box 40, Kennett, Mo. 63857, 314/888-2835, Larry V. Jones, pres.; Ted Bellars, 194 Court St., Piggott, Ark. 72454, sec.-treas.

SMALL PREFERENCE AGENCIES (Bonneville Power Administration customers), Heyburn, Idaho 83336, 208/678-8158, Larry Burbank, Heyburn, Idaho, pres.; Joseph Helgeson, 406/755-5483, Flathead Electric Cooperative, Kalispell, Mont., vice pres.

TENNESSEE VALLEY PUBLIC POWER ASSOCIATION, 831 Chestnut St., Chattanooga, Tenn. 37402, 615/756-6511, Jerry L. Campbell, exec. dir.; W.D. Towers, Holston Electric Cooperative, Rogersville, Tenn., pres.; Harold L. Crenshaw, Milan, Tenn., vice pres.; Don Collette, McMinnville, sec.-treas.

STATE ASSOCIATIONS

MUNICIPAL ELECTRIC UTILITY ASSOCIATION OF ALABAMA, 1208 Staley, Opelika, Ala., 36801, 205/749-9094, Guy Thompson, Opelika, chrm.; John Ford, Tuskeegee, vice chrm.; H. Sewell St. John, Sr., Troy, sec.-treas.

ARIZONA MUNICIPAL POWER USER'S ASSOCIATION, Suite 1402, 3003 N. Central Ave., Phoenix, Ariz. 85012, 602/248-7213, Michael A. Curtis, exec. sec.; Jerry Flanders, Arizona Electric Power Cooperative, Benson, pres.; Dalton Cole, Coolidge, vice pres.; Wm. J. Metheny, Electrical District No. 2, Coolidge, sec.; James Guinone, treas.

CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION, Suite 103, 1213 K St., Sacramento, Cal. 95814, 916/441-1733, Gerald L. Jordan, exec. dir.; Kenneth D. Duke, Inglewood, pres.; Bill Fell, Glendale Public Service Dept., vice pres.; Harold Guetersloh, Jr., San Francisco, treas.; Ernest Geodes, Turlock Irrigation Dist., sec.

NORTHERN CALIFORNIA MUNICIPAL ELECTRIC ASSOCIATION, 760 Parkview Ave., Redding, Cal. 96001, 916/246-1151, Jim Simpson, pres.

COLORADO ASSOCIATION OF MUNICIPAL UTILITIES, Box 360, La Junta 81050, 303/384-2546, Robert H. Smith, La Junta, pres.; Bob Dekker, Estes Park, first vice pres.; Kevin Wailes, Lamar, second vice pres.; Mike Hall, Fountain, sec.-treas.

FLORIDA MUNICIPAL UTILITIES ASSOCIATION, Box 10114, Suite 804, Barnett Bank Bldg., 315 S. Calhoun, Tallahassee, Fla. 32302, 904/224-3314, Edwin Charles Shreve, Jr., exec. vice pres.; Keith Roberts, Jacksonville Beach, pres.; H.C. Peters, Jr., Homestead, pres-elect.; Roberta L. Lisle, Gainesville, vice pres.; Joe B. Dykes, Jr., Tallahassee, sec.-treas.

ELECTRICITIES OF GEORGIA, Room 220, 10 Pryor St. Bldg., Atlanta, Ga. 30303, 404/688-5218, Elmer George, exec. dir.; Eugene P. Nuss, gen. mgr.; Mayor Lillian Webb, Norcross, chrm.; J.B. Smith, Thomasville, vice chrm.

ILLINOIS MUNICIPAL UTILITIES ASSOCIATION, 1504 Wedgefield Circle, Naperville, Ill. 60540, 312/357-2525, Peg Glink, exec. sec.; Douglas Williams, Highland, pres.; Gary Zimmerman, Winnetka, first vice pres.; Frank Roby, second vice pres.; Victor Marma, Naperville, sec.-treas.

INDIANA MUNICIPAL ELECTRIC ASSOCIATION, Box 2648, Anderson, Ind. 46011, 317/643-6913, Robert L. Rock, exec. sec.; Dwight Langer, Peru, pres.; James B. Nelson, Lebanon, sec.-treas.

IOWA ASSOCIATION OF MUNICIPAL UTILITIES, Room 520, Insurance Exchange Bldg., Des Moines, Iowa. 50309, 515/282-0904, Bart Rule, exec. dir.; William G. Tobin, Rock Rapids,

pres.; Eugene P. Smith, Coon Rapids, first vice pres.; Don Fahlenkamp, Montezuma, sec.-treas.

KANSAS MUNICIPAL UTILITIES, INC., Box 1225, McPherson, Kan. 67460, 316/241-1423, Louis Stroup, Jr., exec. dir.; Harold Tarlton, Hoisington, pres.; Pete Sharp, Sharon Springs, first vice pres.; Ben Payton, Kingman, second vice pres.; Henry Crosby, McPherson, sec.-treas.

KENTUCKY MUNICIPAL ELECTRIC POWER ASSOCIATION, 214 W. Main St., Frankfort, Ky. 40601, 502/223-2063, Lyle D. Cobb, exec. dir.; John C. Wagner, Frankfort, pres.; Leroy Borgerding, Paducah, vice pres.; Paul Rains, Corbin, sec.-treas.

MUNICIPAL ELECTRIC ASSOCIATION OF **MASSACHUSETTS**, Moulton and W. Main Sts., Georgetown, Mass. 01833, 617/352-8611, James Hall, Mansfield, pres.; Neil E. Murray, Holden, first vice pres.; Bob Gould, Ashburnham, second vice pres.; Richard L. Bailey, Marblehead, sec.-treas.

MICHIGAN MUNICIPAL ELECTRIC ASSOCIATION, 818 Cowley Ave., East Lansing, Mich. 48823, 517/351-6469, S. Don Potter, exec. sec.; Frederick A. Weber, Chelsea, pres.; John Remski, Detroit, vice pres.; Clarence G. Pincumbe, Lansing, treas.

MINNESOTA MUNICIPAL UTILITIES ASSOCIATION, 10 Central Ave., Box B. Buffalo, Minn., 55313, 612/682-4104, Dick Kirkham, exec. dir.; Dallas E. Nelson, Litchfield, pres.; Norman G. Schroeder, Staples, first vice pres.; David M. Martin, Owatonna, second vice pres.; Gregory Sherman, Detroit Lakes, sec.-treas.

MISSOURI ASSOCIATION OF MUNICIPAL UTILITIES, 308 E. High St., Box 401, Jefferson City, Mo. 65102, 314/635-4526, Wendell Locke, exec. sec.; Russell Ellis, Higginsville, pres.; Howard A. Berry, Carthage, first vice pres.; Gerald McHaffle, Springfield, second vice pres.; Ray Callahan, Vandalia, sec.-treas.

UTILITIES SECTION OF THE **NEBRASKA** LEAGUE OF MUNICIPALITIES, 1335 L St., Lincoln, Neb. 68508, 401/476-2829, David L. Chambers, exec. sec.; George Wolverton, asst. in charge of utilities; Bob Arraj, Kimball, pres.

MUNICIPAL ELECTRIC GENERATION ASSOCIATION (MEGA), Box 900, Farmington, N.M. 87401, 505/327-8801, Robert S. Culpepper, chmn.; Dwight D. Arthur, Farmington, sec.; Dr. Harold W. Lavender, Aztec, treas.

MUNICIPAL ELECTRIC UTILITIES ASSOCIATION OF **NEW YORK STATE**, 119 Washington Ave., Albany, N.Y. 12210, 518/463-0451, Frank Noble, exec. dir.; John Rathbone, Hamilton, pres.; John Gilbert, Boonville, pres.-elect.; George D. Reich, Plattsburgh, vice pres.; Wesley G. Ryder, Penn Yan, vice pres.; James S. Pullan, Jamestown, trustee; Warren H. Kuhlman, Rockville Centre, trustee; Frank W. McLear, Groton, sec.; Robert N. Vaisey, Fairport, treas.

ELECTRICITIES OF **NORTH CAROLINA**, P.O. Box 95162, Raleigh, N.C. 27625, 919/876-9170, Ralph W. Shaw, exec. dir.; Mayor Roy B. Culler, Jr., High Point., pres.; Mayor V.A. Peoples, Louisburg, first vice pres.; Mayor George Clay, Jr., Shelby, second vice pres.; T. Bruce Boyette, Wilson, sec.-treas.

NORTH CAROLINA ASSOCIATION OF MUNICIPAL ELECTRIC SYSTEMS, Box 3069, Raleigh, N.C. 27602, 919/834-1311, Ben Taylor, sec.-treas.; Bruce Kirk, Lexington, pres.; Doug Hathaway, Tarboro, vice pres.; David Holloway, technical advisor.

NORTH DAKOTA ASSOCIATION OF MUNICIPAL POWER SYSTEMS, Box 547, Grafton, N.D. 58237, 701/352-3275, Truman Wold, Northwood, pres.; F.E. Pearson, Hillsboro, vice pres.; Robert Lerud, sec.-treas.

OHIO MUNICIPAL ELECTRIC ASSOCIATION, 1500 W. Lane, Box 21315, Columbus, Ohio 43221, 614/488-4941, George B. Crosby, exec. sec.; Robert Nichols, Orrville, pres.; Lyle Wright, Bowling Green, vice pres.

MUNICIPAL ELECTRIC SYSTEMS OF **OKLAHOMA**, c/o Oklahoma Municipal League, 201 N.E. 23rd St., Oklahoma City, Okla. 73105, 405/528-7564, Chuck Smith, exec. dir. of MESO; Buddy Veltema, Walters, pres.; Don Gilbert, Claremore, vice pres.; Karl Stadler, Stillwater, sec.-treas.

LEAGUE OF PUBLICLY OWNED ELECTRIC UTILITIES OF **OREGON**, 325 - 13th St. N.E., Salem, Ore. 97301, 503/371-4841, Dan Westlind, Clatskanie PUD, pres.; Fred Egger, Canby, vice pres.; Doug Sleeth, Forest Grove, sec.-treas.

OREGON PUD DIRECTORS ASSOCIATION, Box 216, Clatskanie, Ore. 97016, 503/728-2163, Claire Fogel, Clatskanie PUD, pres.; Fred Spivey, Northern Wasco Co. PUD, v-pres.; Dan Westlind, Clatskanie PUD, sec.-treas.

PENNSYLVANIA MUNICIPAL ELECTRIC ASSOCIATION, 212 Locust St., Box 1226, Harrisburg 17108, 717/233-5704, William F. Matson, exec. sec.; George Meyers, Pitcairn, pres.; Ed Olander, Lansdale, vice pres.; Paul Bradtmiller, Middletown, sec.-treas.

SOUTH CAROLINA ASSOCIATION OF MUNICIPAL POWER SYSTEMS, 1000 Lyttleton St., Camden, S.C. 29020, 803/432-2421, Charles Litchfield, Camden, pres.; Charles Owen, Rock Hill, vice pres.; Coleman Smoak, Laurens, sec.; Steve Reeves, Newberry, treas.

SOUTH DAKOTA MUNICIPAL ELECTRIC ASSOCIATION, 214 E. Capitol, Pierre, S.D. 57501, 605/224-8654, Robert H. Miller, exec. sec.; David Padgett, Pierre, pres.; Richard Larson, Madison, vice pres.

TENNESSEE MUNICIPAL ELECTRIC POWER ASSOCIATION, 200 Law Bldg., Peach Court, Box 311, Brentwood, Tenn. 37027, 615/373-5738, T.O. Walker, exec. dir.; Jack Delozier, Sevierville, pres.; James C. Jenkins, Memphis, vice-pres.; Michael Browder, Bristol, sec.-treas.

TEXAS PUBLIC POWER ASSOCIATION, 610 Brazos, Suite 502, Austin, Texas 78701, 512/473-2051, Michael Simmons, exec. dir.

MUNICIPAL ELECTRIC ASSOCIATION OF **VERMONT**, 802/888-3348, Stewart Mancib, Ludlow, pres.; Kenneth Mason, Lyndonville, vice pres.; Robert B. Page, Morrisville, sec.-treas.

MUNICIPAL ELECTRIC POWER ASSOCIATION OF **VIRGINIA**, 311 Ironfronts, 1011 E. Main St., Richmond, Va. 23219 (P.O. Box 753, Richmond 23206), 804/649-8471, R. Michael Amyx, exec. sec.-treas.; D. Keith Cook, Bedford, pres.; Eldred Yerks, Danville, vice pres.

WASHINGTON PUBLIC UTILITY DISTRICTS' ASSOCIATION, 1700 Tower Bldg., Seattle, Wash. 98101, 206/622-7441, James Boldt, exec. dir.; William McCrorie, Clallam County PUD, Port Angeles, pres.; Ray Colbert, Okanogan County PUD, vice pres.; Stanford Olsen, Snohomish County PUD, sec.-treas.

EASTERN **WASHINGTON** PUD COMMISSIONERS' ASSOCIATION, 1700 Tower Bldg., Seattle, Wash. 98101, 206/622-7441, James Boldt, exec. dir.; Sig T. Hansen, Franklin County PUD, Pasco, pres.; Alfred Pflugrath, Chelan County PUD, Wenatchee, vice pres.; William Barnes, Okanogan County PUD, Okanogan, sec.-treas.

WESTERN **WASHINGTON** PUD COMMISSIONERS' ASSOCIATION, 1700 Tower Bldg., Seattle, Wash. 98101, 206/622-7441, James Boldt, exec. dir.; Myna (Peggy) Martin, Wahkiakum County PUD, Cathlamet, pres.; Jack Van Derbeek, Grays Harbor County PUD, vice pres.; John Searing, Cowlitz County PUD, sec.-treas.

MUNICIPAL ELECTRIC UTILITIES OF **WISCONSIN**, 421 N. Elizabeth, Jefferson, Wis. 53549, 414/674-3237, Arthur J. Jark, exec. dir.; William C.T. Pappathopoulos, Two Rivers, pres.; Bob Nettnin, Oconomowok, first vice pres.; Robert O. Stuhlmacher, Wisconsin Rapids, sec.-treas.

JOINT ACTION AGENCIES

Arizona

ARIZONA POWER POOLING ASSOCIATION, Rt. 1, Box 69, Coolidge, Ariz. 85228; 602/723-3700; A.J. Faul, Coolidge, pres.; 3 members.

California

MSR (Modesto-Santa Clara-Reading) PUBLIC POWER AGENCY, Box 4060, Modesto, Cal. 95352; 209/578-1212; Charlie Viss, Modesto Irrigation District, gen. mgr.; 3 members.

NORTHERN CALIFORNIA POWER AGENCY, 770 Kiely Blvd., Santa Clara, Cal. 95051; 408/248-3422; Robert Grimshaw, gen. mgr.; Frederick F. Eyerly, Palo Alto, chrm.; 12 members.

SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY, c/o Los Angeles Dept. of Water and Power, 111 N. Hope St., Los Angeles, Cal. 90051; 213/481-4211; Norman E. Nichols, exec. dir.; Everett C. Ross, Riverside, pres.; 10 members.

Colorado

ARKANSAS RIVER POWER AUTHORITY, Box 70, Suite 2, Village Shopping Center, Lamar, Colo. 81052; 303/336-7458; James M. Henderson, gen. mgr.; George N. Baker, Lamar, pres.; 6 members.

MISSOURI BASIN SYSTEMS GROUP, Box 2327, Estes Park, Colo. 80517; 303/586-2393; Robert F. Risch, exec. dir.; Dennis Lindberg, Odebolt, Iowa, pres.; 45 members.

PLATTE RIVER POWER AUTHORITY, Timberline and Horsetooth Roads, Ft. Collins, Colo. 80525; 303/226-4000; Albert J. Hamilton, gen. mgr.; Jerry Trotter, Longmont, chrm.; 4 members.

Connecticut

CONNECTICUT MUNICIPAL ELECTRIC ENERGY COOPERATIVE, 268 Thomas Rd., Groton, Conn. 06340; 203/446-0620; Walter V. Truitt, Jr., exec. dir.; Arthur F. Weeks, Groton, chrm.; 3 members.

Delaware

DELAWARE MUNICIPAL ELECTRIC CORPORATION, 414 Kings Highway, Milford, Del. 19963; 302/422-7600; George Russell, Milford, pres.; 8 members.

Florida

FLORIDA MUNICIPAL POWER AGENCY, 7200 Lake Ellenor Drive, Suite 148, Orlando, Fla. 32809; 305/859-7310; Calvin R. Henze, gen. mgr.; Barbara Bidwell, New Smyrna Beach, chrm.; 25 members.

Georgia

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA, 225 Peachtree St., South Tower, Suite 800, Atlanta, Ga. 30303; 404/659-1555; Donald L. Stokley, gen. mgr.; Gayle Manley, Albany, chrm.; 47 members.

Indiana

INDIANA MUNICIPAL POWER AGENCY, 5920 W. Castleway Drive, Indianapolis, Ind. 46250; 317/849-3242; Frank Rudolph, Greendale, chrm.; 11 members.

KENTUCKY-INDIANA POWER ASSOCIATION, 511 Fourth St., Huntingburg, Ind. 47542; 812/683-2211, Loma Hartke, exec. sec.; Dan Riffe, Tipton, pres.; 5 members.

Iowa

NORTH IOWA MUNICIPAL ELECTRIC COOPERATIVE ASSOCIATION, Legion Bldg., Box 445, Humboldt, Iowa 50548; 515/332-2981; Dexter M. Smith, exec. vice pres.; N.R. Scholer, Algona, pres.; 19 members.

SOUTH IOWA MUNICIPAL ELECTRIC COOPERATIVE, 321 N. First St., Winterset, Iowa 50273; 515/462-2454, -2152; George C. Berry, Winterset, pres.; 17 members.

Kansas

EASTERN KANSAS POWER AGENCY, c/o Municipal Electric Dept., Memorial Bldg., Box 311, Chanute, Kan. 66720; 316/431-9306; Ron Reed, Chanute, pres.; 13 members.

KANSAS MUNICIPAL ENERGY AGENCY, 1106 E. 27th, Suite 4, Box 1026, Hays, Kan. 67601; 913/628-6144; Gilbert E. Hanson, Jr., gen. mgr.; Norman L. Sharp, Sharon Springs, pres.; 34 members.

NORTHWEST KANSAS POWER AGENCY, Box 490, Sharon Springs, Kansas 67758; 913/852-4257; Norman L. Sharp, Sharon Springs, pres.; 13 members.

Louisiana

LOUISIANA ENERGY AND POWER AUTHORITY (formerly Electric Power Systems Authority of La.), 804 St. John St., Lafayette, La. 70501; 318/269-4046; Sylvan Richard, gen. mgr.; Mayor Carroll Lanier, Alexandria, chrm.; 9 members.

Maine

DIRIGO ELECTRIC COOPERATIVE, c/o Eastern Maine Electric Cooperative, Box 425, Calais, Maine 04619; 207/454-7555; Robert V. Clark, Eastern Maine Electric Cooperative, pres.; 7 members (includes municipals).

Massachusetts

MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC CO., Stony Brook Energy Center, Box 426, Ludlow, Mass. 01056; 413/589-0141; Phillip C. Otness, gen. mgr.; F.H. King, Holyoke, pres.; 31 members.

Michigan

MICHIGAN PUBLIC POWER AGENCY, 1922 S. Division, Grand Rapids, Mich. 49506; 616/245-8884; Richard Gorman, gen. mgr.; William Strom, Traverse City, chrm.; 18 members.

MICHIGAN SOUTH CENTRAL POWER AGENCY, 720 Herring Rd., Box 62, Litchfield, Mich. 49252; 517/542-2346; Raymond Cristell, gen. mgr.; James Endicott, Coldwater, chrm.; 5 members.

Minnesota

NORTHEASTERN MINNESOTA MUNICIPAL POWER AGENCY, Box 249, Hibbing, Minn. 55746; 218/263-6120; Joe Vumbaco, Hibbing, pres.; Norman Schroeder, Staples, chrm.; 13 members.

NORTHERN MUNICIPAL POWER AGENCY, c/o Thief River Falls Light and Water Dept., Box 528, Thief River Falls, Minn. 56701; 218/681-5816, -2943; John T. Anderson, Thief River Falls, pres.; 12 members.

SOUTHERN MINNESOTA MUNICIPAL POWER AGENCY, Box 6547, Rochester, Minn. 55901; 507/285-0478; Pierre J. Heroux, gen. mgr.; David Martin, Owatonna, pres.; 16 members.

UNITED MINNESOTA MUNICIPAL POWER AGENCY, 421 W. Third St., Litchfield, Minn. 55355; 612/693-3277; Dallas Nelson, Litchfield, pres.; 8 members.

WESTERN MINNESOTA MUNICIPAL POWER AGENCY, Box 70, 124 Armstrong Blvd. S., St. James, Minn. 56081; 507/375-3121; Robert J. Banks, St. James, pres.; 18 members.

Mississippi

MUNICIPAL ENERGY AGENCY OF MISSISSIPPI, c/o Marvin Carraway, sec., Box 866, Greenwood, Miss. 38930; Richard Webster, Jr., chrm.; 8 members.

Missouri

MISSOURI JOINT MUNICIPAL ELECTRIC UTILITY COMMISSION, Box 401, 308 E. High St., Jefferson City, Mo. 65102; 314/635-4526; Wendell Locke, gen. mgr.; R.E. Malon, Columbia, chrm., 17 members.

Nebraska

NEBRASKA MUNICIPAL POWER POOL, Box 95124, 1335 L St., Lincoln, Neb. 68509; 402/474-4759; H. Steve Wacker, gen. mgr.; Mayor Dale L. Shaffer, Falls City, pres.; 48 members.

North Carolina

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1, Box 95162, 3117 Poplarwood Ct., Raleigh, N.C. 27625; 919/876-9170; Ralph W. Shaw, gen. mgr.; Mayor Roy B. Culler, High Point, chrm.; 20 members.

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 2, Box 95162, 3117 Poplarwood Ct., Raleigh, N.C. 27625; 919/876-9170; Ralph W. Shaw, gen. mgr.; Abbott N. Sawyer, Washington, chrm.; 16 members.

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 3, Box 95162, 3117 Poplarwood Ct., Raleigh, N.C. 27625; 919/876-9170; Ralph W. Shaw, gen. mgr.; Mayor Simon C. Sitterson, Jr., Kinston, chrm., 36 members.

North Dakota

NORTH DAKOTA MUNICIPAL POWER AGENCY, Northwood, N.D. 58267; 701/587-5581; Truman Wold, Northwood, pres.; 7 members.

Ohio

AMERICAN MUNICIPAL POWER-OHIO, INC., Box 21315, 1500 W. Lanes Ave., Columbus, Ohio 43221; 614/488-4941; George Crosby, exec. mgr.; William Lyren, Wadsworth, pres.; 50 members.

Oklahoma

NORTH CENTRAL OKLAHOMA MUNICIPAL POWER POOL AUTHORITY, Box 747, Stillwater, Okla. 74074; 405/624-1464; Lawrence Gish, Stillwater, chrm.; 6 members.

South Carolina

PIEDMONT MUNICIPAL POWER AGENCY, Box 64, Gaffney, S.C. 29340; 803/489-8181; Houston F. Crater, Jr., interim exec. dir.; Sam Wallace, Laurens, chrm.; 13 members.

South Dakota

HEARTLAND CONSUMERS POWER DISTRICT, Box 248, 203 W. Center, Madison, S.D. 57042; 605/256-6536; Wendell J. Garwood, gen. mgr.; Ellwood Paulsen, Centerville, pres.; 17 members.

MISSOURI BASIN MUNICIPAL POWER AGENCY, Box 984, 100 N. Phillips, Sioux Falls, S.D. 57101; 605/338-4042; Russell Dau, gen. mgr.; Earl LaMaack, Alexandria, pres.; 52 members.

SOUTH DAKOTA MUNICIPAL POWER AGENCY, 901 Fourth Ave. S.W. Watertown, S.D. 57201; 605/886-5733; Darrell Frankson, Watertown, pres.; 11 members.

Texas

SAM RAYBURN MUNICIPAL POWER AGENCY, 303 N. Jackson St., Livingston, Texas 77351; 713/327-

8213; Robert Willis, exec. dir.; Wayne DuBose, Jasper, pres.; 3 members.

TEXAS MUNICIPAL POWER AGENCY, 600 Arlington Downs Tower, Arlington, Texas 76011; 817/461-4400; Joel T. Rodgers, gen. mgr.; Richard Smith, Bryan, pres.; 4 members.

Utah

INTERMOUNTAIN POWER AGENCY, Box BB, 8648 South 300 West, Sandy, Utah 84070; 801/566-3608; Joseph Fackrell, gen. mgr., Reece Nielsen, Hyrum, chrm.; 30 members.

UTAH ASSOCIATED MUNICIPAL POWER SYSTEMS, Box BB, Sandy, Utah 84070; 801/566-3933; John Young, Murray City, chrm.; 28 members.

Vermont

VERMONT PUBLIC POWER SUPPLY AUTHORITY, 585 Pine St., Burlington, Vt. 05401; 802/658-0300, ext. 63; Harland G. Titemore, gen. mgr.; Orman Croft, Swanton, chrm.; 11 members.

Washington

PUBLIC POWER COUNCIL, Box 1307, 1310 Main St., Vancouver, Wash. 98666; 206/694-6553; Robert M. Greening, Jr., mgr.; Alan H. Jones, McMinnville, chrm.; 113 members.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM, Box 968, 3000 George Washington Way, Richland, Wash. 99352; 509/372-5000; Robert L. Ferguson, mgng. dir.; Glenn Walkly, Franklin County PUD, pres.; 23 members.

Wisconsin

WISCONSIN PUBLIC POWER, INC., Box 44, Sun Prairie, Wis. 53590; 608/837-2653; David W. Penn, gen. mgr.; Ernest Mullen, Kaukauna, pres., 38 members.

WESTERN WISCONSIN MUNICIPAL POWER GROUP, 860 Lincoln Ave., Fennimore, Wisc. 54809; 608/822-6501; Charles J. Leuck, Fennimore, pres.; 11 members.

Wyoming

WYOMING MUNICIPAL POWER AGENCY, Box 1075, 207 Main St., Lusk, Wyo. 82225; 307/334-2170; Larry LaMaack, exec. dir.; George Frank, Cody, chrm.; 7 members.

FEDERAL POWER AGENCIES

DEPARTMENT OF ENERGY, Washington, D.C. 20585, 202/252-5000

(Editor's Note: Because of the change in administrations scheduled for about the time this directory becomes available the names and titles of key people in the Department of Energy are not included in this year's directory. Changes will undoubtedly be made in key personnel in other federal energy agencies listed below. Some of them are Senior Executive Service or other career employees whose tenure will be longer than that of presidential appointees.)

Created under Public Law 95-91, signed by President Carter on Aug. 4, 1977, the Department of Energy (DOE) was activated on Oct. 1, 1977. The department includes federal power marketing agencies formerly in the Department of the Interior (see listings below); the former Federal Power Commission, renamed the Federal Energy Regulatory Commission (see listing below); all functions of the former Federal Energy Administration and Energy Research and Development Administration; and a variety of other functions transferred from several other federal departments and agencies.

ECONOMIC REGULATORY ADMINISTRATION, DOE, Washington, D.C. 20461 202/252-5000. Administrator, Hazel R. Rollins; deputy administrator for operations and emergency management, Barton R. House; assistant administrator for petroleum operations, Paul J. Burke (acting); assistant administrator for regulatory policy, F. Scott Bush; assistant administrator for fuels conversion, Robert L. Davies; assistant administrator for utility systems, Jerry L. Pfeffer; assistant administrator for enforcement, Gordon W. Harvey; special counsel, Paul L. Bloom; director, office of management and program coordination, Sandra L. Delaney; director, energy liaison center, Yvonne Allen.

The Economic Regulatory Administration (ERA) is the agency within the Department of Energy responsible for administering and enforcing most of the department's regulatory programs. ERA is responsible for developing, administering and enforcing regulations for crude oil, petroleum products, coal, natural gas and electric power. The responsibility for natural gas and electricity regulations is shared with the Federal Energy Regulatory Commission (FERC), an independent regulatory agency within DOE. FERC regulates the transportation and sale of natural gas and the transmission and sale of electricity in interstate commerce.

ENERGY INFORMATION ADMINISTRATION, DOE, Washington, D.C. 20461, 202/252-5000. Acting Administrator, Albert H. Linden, Jr.; assistant administrator for energy systems and support, Wray Smith; assistant administrator for energy data operations, Jimmie L. Petersen; assistant administrator for energy information validation, Charles S. Smith; assistant administrator for applied analysis, Lillian D. Regelson; assistant administrator for program development, Elizabeth Chase MacRae; director, Office of Energy Information Services, John E. Daniels.

In establishing the Energy Information Administration (EIA) in 1977, Congress gave the agency the responsibility for ". . . carrying out a central, comprehensive and unified energy data and information program which will collect, evaluate, assemble, analyze and disseminate data and information which is relevant to energy resource reserves, energy production, demand and technology, and related economic and statistical information; or which is relevant to the adequacy of energy resources to meet demands in the near and longer term future for the nation's economic and social needs."

FEDERAL ENERGY REGULATORY COMMISSION, 825 N., Capitol St. NE, Washington, D.C. 20426, 202/357-8055. Commissioners (all terms expire Oct. 28): Georgiana Sheldon, acting chairman (1980); George R. Hall (1980); Matthew Holden, Jr. (1981); John David Hughes (1982); vacant (1983); general counsel (vacant); chief accountant, Lorin H. Drennan, Jr.; secretary, Kenneth F. Plumb; director, Office of Electric Power Regulation, William W. Lindsay; director, Office of Congressional and Public Affairs, Kenneth Levine.

Under the law creating the Department of Energy, most of the electric power regulatory functions of the former Federal Power Commission were tranferred to the Federal Energy Regulatory Commission (FERC).

NUCLEAR REGULATORY COMMISSION, 1717 H. St. NW, Washington, D.C. 20555, 202/492-7000. Commissioners (five-year terms expire June 30) John F. Ahearne, chairman (1983); Joseph M. Hendrie (1981); Victor Gilinsky (1984); Peter A. Bradford (1982); vacancy (1980).

The Nuclear Regulatory Commission (NRC) licenses and regulates the use of nuclear energy by licensing persons and companies to build and operate nuclear reactors and to own and use nuclear materials. NRC makes rules and sets standards for license and inspects activities of licensees.

ALASKA POWER ADMINISTRATION, Box 50, Juneau, Alaska 99802, 907/586-7405. Administrator, Robert J. Cross.

Alaska Power Administration, (APA) was established in 1967 to operate and market power from federal hydroelectric projects in Alaska including the 30,000-kw Eklutna Project constructed by the former Bureau of Reclamation and the 47,160-kw Snettisham Project under terms of an agreement between the Department of the Interior and the Army Corps of Engineers. In fiscal 1980, APA sold 286 million kwh and had power revenues of $3.6 million.

BONNEVILLE POWER ADMINISTRATION, 1002 N.E. Holladay St., Box 3621, Portland, Ore. 97208, 503/234-3361. Administrator, Sterling Munro; deputy administrator, C. Ray Foleen; assistant administrator for power management, Earl E. Gielde; assistant administrator, manager of Washington, D.C., office, George E. Bell, Federal Bldg., Room 3352, 12th and Pennsylvania Ave. NW, Washington, D.C. 20461, 202/633-8330.

BPA, established under the Bonneville Project Act of 1937, markets power from projects constructed by the Army Corps of Engineers and the former Bureau of Reclamation in the Columbia River Basin. As of December 31, 1979, the Federal Columbia River Power System included 30 hydroelectric projects with 17,926,788 kw of installed capacity, and BPA during the calendar year sold 71 billion kwh of electricity for $271 million to 116 publicly-owned and cooperative systems, 8 private power companies, and 15 industries in the Pacific Northwest and to 14 agencies and companies outside the Northwest.

SOUTHEASTERN POWER ADMINISTRATION, Samuel Elbert Bldg., Elberton, Ga. 30635, 404/283-3261. Administrator, Harry F. Wright; chief, division of power sales, Kenelm E. Rucker.

Southeastern Power Administration (SEPA), was established in 1950 to market power from Army Corps of Engineers projects in 10 southeastern states. In fiscal year 1980 SEPA sold 8.07 billion kwh from 21 projects with a total installed capacity of 2,712,375 kw and had revenues of $63,793,377.

SOUTHWESTERN POWER ADMINISTRATION, Page Belcher Federal Building, 333 W. Fourth, Box 1619, Tulsa, Okla. 74101, 918/581-7474. Administrator, James B. Hammett; deputy administrator, Warren L. Jamison; chief, power marketing division, Walter M. Bowers.

Southwestern Power Administration (SWPA), was established in 1944 to market power from Army Corps of Engineers projects in Arkansas, Missouri, Oklahoma and Texas. In fiscal 1980, SWPA sold 4.5 billion kwh of electricity from projects with a total installed capacity of 1,929,800 kw and had gross revenues of approximately $61,000,000.

WESTERN AREA POWER ADMINISTRATION (incorporating federal power marketing and transmission functions which were transferred from the Water and Power Resources Service, formerly the Bureau of Reclamation), Box 3402, Golden, Colo. 80401, 303/231+ ext. Administrator, Robert L. McPhail (x1511); deputy administrator, William H. Clagett (x1513); assistant administrator for management services, Don W. Shinkle (x1517); assistant administrator for engineering, Robert L. Krahn (x1516); assistant administrator for power management, operations and maintenance, Thomas L. Weaver (x1518); general counsel, Thomas A. Hine (x1534); conservation officer Joe D. Hall (x7440); public information officer, Robert M. Zeeck (x1554).

The service area of the Western Area Power Administration (Western or WAPA) extends into 15 western states and includes about 15,800 miles of transmission lines and approximately 7,740 million kw of capacity at 48 hydro projects constructed by the Corps of Engineers and the former Bureau of Reclamation. During the fiscal year ending Sept. 30, 1979, power sales were about 36.2 billion kwh and power revenues were $306.3 million.

TENNESSEE VALLEY AUTHORITY, Knoxville, Tenn. 37902, 615/632-2101. Directors (nine-year terms expire May 18): S. David Freeman (1984); Richard M. Freeman (1987); Robert N. Clement (1981). General manager, William F. Willis; manager of power, Hugh G. Parris, Chattanooga, Tennessee 37401, 615/755-3011.

The Tennessee Valley Authority (TVA) is a corporate agency of the federal government created by Congress in 1933 as a regional resource development agency. As of Sept. 30, 1980, the authority had a total installed capacity of 28,588,195 kw (coal-fired, 17,796,085 kw; hydro, 4,826,110 kw; nuclear, 3,456,000 kw; combustion turbine, 2,510,000 kw), and also marketed the output of seven federal dams constructed by the Corps of Engineers on the Cumberland River (853,000 kw) and 12 dams of the Aluminum Company of America (423,715 kw) for a total system capacity of 29,864,910 kw.

Almost 65 percent of TVA power sales of 120.6 billion kwh in fiscal 1980 were made at wholesale to 110 municipal utilities and 50 rural electric cooperatives serving 2.8 million consumers in Tennessee, northern Alabama, northern and eastern Mississippi, southern Kentucky and smaller areas in northern Georgia, western North Carolina and southwestern Virginia. TVA also sold 23.9 billion kwh to private industries; 16.9 billion kwh to other federal agencies and 708 million kwh to private power companies.

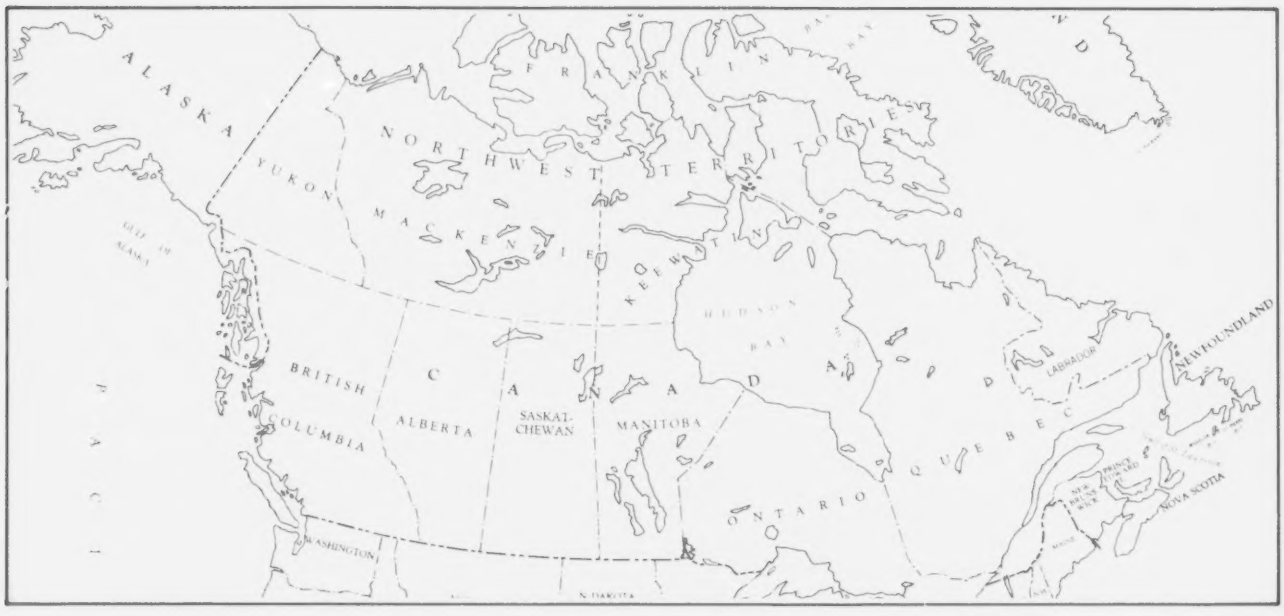
U.S. ARMY CORPS OF ENGINEERS, Pulaski Building, Washington, D.C. 20314, 202/272-0005. Chief of Engineers, Lt. Gen. J. K. Bratton; deputy Chief of engineers Maj. Gen. William R. Wray; director of civil works, Maj. Gen. E. R. Heiberg III; exec. dir., civil works, Col. Robert L. Friedenwald.

At the end of calendar year 1980 the U.S. Army Corps of Engineers had constructed and was operating 68 hydroelectric projects with a total installed capacity of 18.7 million kw. Power from corps projects is marketed by agencies of the Department of Energy.

RURAL ELECTRIFICATION ADMINISTRATION, South Bldg., U.S. Dept. of Agriculture, Washington, D.C. 20250, 202/447-5123. Administrator, Robert W. Feragen (resignation effective Jan. 20, 1981); deputy administrator, Susan T. Shepherd; assistant administrator-electric, Joseph S. Zoller.

The Rural Electrification Administration (REA), established under executive order by President Franklin D. Roosevelt in 1935 and subsequently authorized by the Rural Electrification Act of 1936, makes loans to provide electric and telephone service to rural areas.

	Fiscal Year 1980	*Cumulative*
Insured Loans: 2 percent	*$142,458,000*	*$9,612,654,821*
5 percent	*$782,542,000*	*$5,055,014,000*
Total Insured	*$925,000,000*	*$14,667,668,821*
Loans Guaranteed by REA:	*$5,660,111,000*	*$20,794,423,000*
Total:	*$6,585,111,000*	*$35,462,091,821*



MAJOR CANADIAN ELECTRIC UTILITIES

By R. ROBIN PALIN

THIRTY-THREE ELECTRIC UTILITIES in Canada, represented by the Canadian Electrical Association (CEA), are directly responsible for generating more than 95 percent of the nation's electric energy. The bulk of the remaining power is generated by large industrial power users who maintain their own facilities.

Most electric utilities are responsible for generation, transmission and distribution to the ultimate customer. In several cases, major generating utilities sell in bulk to municipally owned utilities. With the exception of Ontario, where 334 municipally owned utilities buy power direct from the generating and transmitting authority (Ontario Hydro), most of the major municipal utilities elsewhere in Canada also are members of CEA.

Unlike in the United States, privately owned power companies in Canada are in the distinct minority. Most utilities are owned directly and completely by their provincial governments.

Power generation in Canada in 1979 was 55 percent hydro, 36 percent conventional thermal (consisting of approximately 6 percent internal combustion, 15 percent gas-fired, 25 percent oil-fired and 55 percent coal-fired generation) and 8 percent nuclear.

Power exports to the United States in 1979 totalled 31,378 gigawatthours compared to 1,792 gwh imported for a net export of 29,586 gwh. This represented 9 percent of net Canadian electricity generation. Surpluses in 1979 indicate there is room for increased electricity exports to the United States.

The following is a brief outline of the major electric utilities in Canada by province:

British Columbia

British Columbia Hydro & Power Authority is the largest electric utility in British Columbia. It is owned entirely by the provincial government and supplies the entire province. Total installed generating capacity is 7,448 mw of which 6,805 mw are hydroelectric. B.C. Hydro has 6,009 employees.

West Kootenay Power is a small private utility dedicated principally to supplying power to a large private smelter operation in the interior of British Columbia. It also supplies power to the city of Trail. Generating capacity is 42 mw, all of which is hydroelectric.

Alberta

Alberta is the only province in Canada that has not nationalized the power companies. This is the home of Canada's two largest private power companies.

Calgary Power is the largest private or investor-owned electric utility in Canada, with an installed generating capacity of 2,995 mw, 2,125 mw of which is coal-fired power with most of the balance, 800 mw, being hydro. Some 242,000 customers are served directly by Calgary Power. That figure does not include the 204,083 customers served by the City of Calgary municipal utility which buys all of its power requirements in bulk from Calgary Power.

Alberta Power, the second largest privately owned electric utility in Canada, is located in Edmonton, Alberta, and serves 120,134 customers directly aside from some bulk power sales to Edmonton Power, the city-owned electric utility. Installed generating capacity is 668 mw, of which 516 mw is coal-fired. Municipally owned Edmonton Power has installed generating capacity of 1,050 mw, all of it gas-fired.

Alberta Power is owned by Canadian Utilities, a subsidiary of International Utilities of Philadelphia, Pa. Canadian Utilities also owns and operates Yukon

Palin was until recently manager of public affairs for the Canadian Electrical Association, Suite 580, 1 Westmount Square, Montreal, Quebec H3Z 2P9, 514/937-6181.

Electric in the Northwest Territories, and several gas utilities.

Saskatchewan

Saskatchewan Power Corp. serves all of the province's 345,925 customers. It is owned entirely by the provincial government. Of 1,867 mw of installed generating capacity, 1,077 mw are coal-fired, 208 mw gas-fired, 115 mw are derived from internal combustion and the balance, 467 mw, from hydro.

Manitoba

Manitoba Hydro, owned by the provincial government, is the largest of two electric utilities in the province. Of a total installed capacity of 3,926 mw, 3,504 mw are produced from hydro. Manitoba Hydro serves the entire province directly with the exception of its largest city, Winnipeg, which is served by the municipal utility.

Winnipeg Hydro is a municipally owned utility serving 111,376 customers within the city. Installed generating capacity consists of 141 mw of hydro and 50 mw of coal-fired thermal power.

Ontario

Ontario Hydro is the largest electric utility in Canada. Owned by the provincial government, its mandate is to meet generation and transmission requirements within the province. Distribution to ultimate customers is handled by 334 municipal utilities who buy bulk power from Ontario Hydro. Total generating capacity is 24,534 mw consisting of 8,764 mw coal, 6,444 mw hydro, 5,380 mw nuclear, 2,295 mw oil, 1,200 mw gas and 451 mw internal combustion.

Quebec

Hydro-Quebec is the second largest utility in Canada. It is owned by the provincial government and 13,487 mw of its total capacity of 14,861 mw are derived from hydro. Hydro-Quebec is the only Canadian utility besides Ontario Hydro to have an operating nuclear reactor.

The balance of Hydro-Quebec's rated capacity, 824 mw, is all peaking power of which 600 mw is internal combustion, 446 mw is gas turbine, and 62 mw is diesel oil. Its nuclear reactor, owned by Atomic Energy of Canada Limited, the federally owned nuclear agency, is rated at 266 mw.

New Brunswick

New Brunswick Electric Power Commission is wholly owned by the provincial government of the province of New Brunswick and is responsible for all generation, transmission, and distribution of electrical energy within the province. As of Dec. 31, 1979, it had a total rated operating capacity of 2,783 mw, composed mostly of oil-fired, thermal generation. The thermal system is rated at 1,883 mw, including 231 mw of coal-fired generation, 1,651 mw oil, and 29 mw other. Hydro provided 712 mw.

New Brunswick Electric Power Commission will be the third utility in the country to add nuclear power to its capacity. It is constructing a 600-mw nuclear reactor at its Point Lepreau station.

Nova Scotia

The Nova Scotia Power Corp. is also a provincially owned utility. Its total generation of 1,787 mw includes 481 mw coal, 746 mw oil, 205 mw gas and 355 mw hydro. Aside from several small municipal utilities responsible for distribution within their own service area, Nova Scotia Power Corp. is the sole generating, transmitting, and distributing utility in the province.

Prince Edward Island

Maritime Electric Co. Ltd. is a small, privately owned utility serving Canada's smallest province. Maritime Electric's total generating capacity includes 71 mw of oil-fired generation and 39 mw of gas turbine generation. They are interconnected to New Brunswick through a submarine cable across the strait. Maritime Electric is a wholly owned subsidiary of Montreal Engineering Co.

Newfoundland

The province of Newfoundland is served by a combination of public and private utilities. The largest utility in the province, responsible for generation primarily and some distribution in remote areas, is Newfoundland and Labrador Hydro. It is owned by the government of the province of Newfoundland. Newfoundland and Labrador Hydro also owns Churchill Falls Labrador Corp., Twin Falls Power Corp., Gull Island Power Corp. and the Lower Churchill Development Corp. Including all its subsidiaries, Newfoundland and Labrador Hydro has a total of 6,407 mw of which 5,923 mw is derived from hydro (5,225 mw of which are produced by Churchill Falls Labrador Corp.) with 450 mw of oil-fired generation and 34 mw of internal combustion.

Aside from serving large industrial customers in some areas, and individual customers in remote areas, the bulk of Newfoundland and Labrador Hydro's generation is sold to Newfoundland Light & Power Corporation, a private utility responsible for distribution to most of the island's individual customers. Newfoundland Light & Power Corp. also has some of its own generation, including 30 mw of oil-fired generation, 45 mw gas turbine generation, 14 mw of internal combustion generation and 82 mw of hydro generation.

Those are the principal utilities within Canada. Following are their addresses, phone numbers and chief executive officers:

British Columbia Hydro and Power Authority, 970 Burrard St., Vancouver, British Columbia V6Z 1Y3, 604/663-2212, R.W. Bonner, chairman; J.N. Olsen, president and chief operating officer.

Alberta Power Ltd., 10040 - 104th St., Edmonton, Alberta T5J 2V6, 403/420-7310, E.W. King, president and chief executive officer.

Calgary Power Ltd., Box 1900, Calgary, Alberta T2P 2M1, 403/267-7310, M.M. Williams, president.

Saskatchewan Power Corp., Victoria Avenue & Scarth St., Regina, Saskatchewan S4P 0S1, 306/525-7100, F. Ursel, general manager.

Manitoba Hydro, Box 815, Winnipeg, Manitoba R3C 2P4, 204/474-3403, R.M. Fraser, chief operating officer and general manager.

Ontario Hydro, 700 University Ave., Toronto, Ontario M5G 1X6, 416/592-2121, D.J. Gordon, president.

Hydro-Quebec, 75 Dorchester Blvd. W., Montreal, Quebec H2Z 1A4, 514/285-1213, R.A. Boyd, president.

New Brunswick Electric Power Commission, 527 King St., Fredericton, New Brunswick E3B 4X1, 506/453-4444, A.J. O'Connor, general manager.

Nova Scotia Power Corp., Box 910, Halifax, Nova Scotia B3J 2W5, 902/424-5754, L.F. Kirkpatrick, chairman and president.

Maritime Electric Co. Ltd., Box 1328, Charlottetown, P.E.I. C1A 7N2, 902/892-6531, J.H. Reynolds, general manager.

Newfoundland Light & Power Co. Ltd., Box 8910, St. John's, Newfoundland A1B 3P6, 709/737-5616, D.S. Templeton, vice-president and general manager.

Newfoundland and Labrador Hydro, Box 9100, St. John's, Newfoundland A1A 2X8, 709/753-8990, V.L. Young, president and chief executive officer.

2 More Ways You Can Help Your Customers Use Energy Wisely

The American Public Power Association has created two new consumer folders to assist local systems in conducting educational and energy conservation programs.

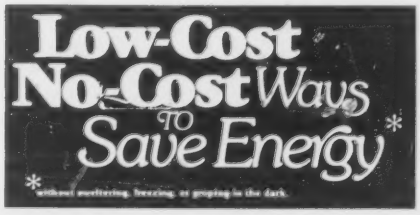
These 3" x 6" folders can be distributed in a variety of ways: as bill stuffers or special mailings; as handout materials for school or meeting programs; through local appliance and hardware dealers; or through utility offices as part of countertop or reception area displays. Prices below are based on the quantity ordered of individual folders.

What You Need to Know about those new appliance labels
Next time you shop for a major appliance, you will see the new yellow-and-black ENERGYGUIDE labels that will tell you the appliance's energy cost and will allow you to compare it to the energy cost of similar models. This folder will help you use those new labels to save money and energy.

1 What You Need to Know About Those New Appliance Labels

This attractive yellow-and-black folder is designed to help consumers understand the new ENERGY GUIDE labeling program mandated by the Federal Trade Commission. The labels help consumers by providing approximate energy costs/energy efficiency ratings for operating new appliances. The folder provides information about the different kinds of labels, and answers the most frequently asked questions.

QUANTITY	APPA MEMBERS	NON-MEMBERS
500 (minimum order)	$7 per 100	$9 per 100
600 to 4,900	$6 per 100	$8 per 100
5,000 to 9,900	$5 per 100	$7 per 100
10,000 to 19,900	$4.50 per 100	$6 per 100
20,000 to 49,900	$4 per 100	$5.50 per 100
50,000 and over	$3 per 100	$4.50 per 100



2 Low-Cost, No-Cost Ways to Save Energy

Expensive energy-saving suggestions have been getting most of the publicity for the past few years. Now, you can provide your consumers with five LOW-COST, NO-COST WAYS TO SAVE ENERGY. The means discussed are applicable to homeowners or renters alike, and include installation of a shower flow controller, insulating forgotten places, lowering washing machine temperatures, using curtains and shades, and turning down the thermostat and insulating water heaters.

TO: Publications Department
American Public Power Association
2600 Virginia Ave., N.W.
Washington, D.C. 20037

☐ Payment enclosed
☐ Bill me

☐ APPA member
☐ non-member

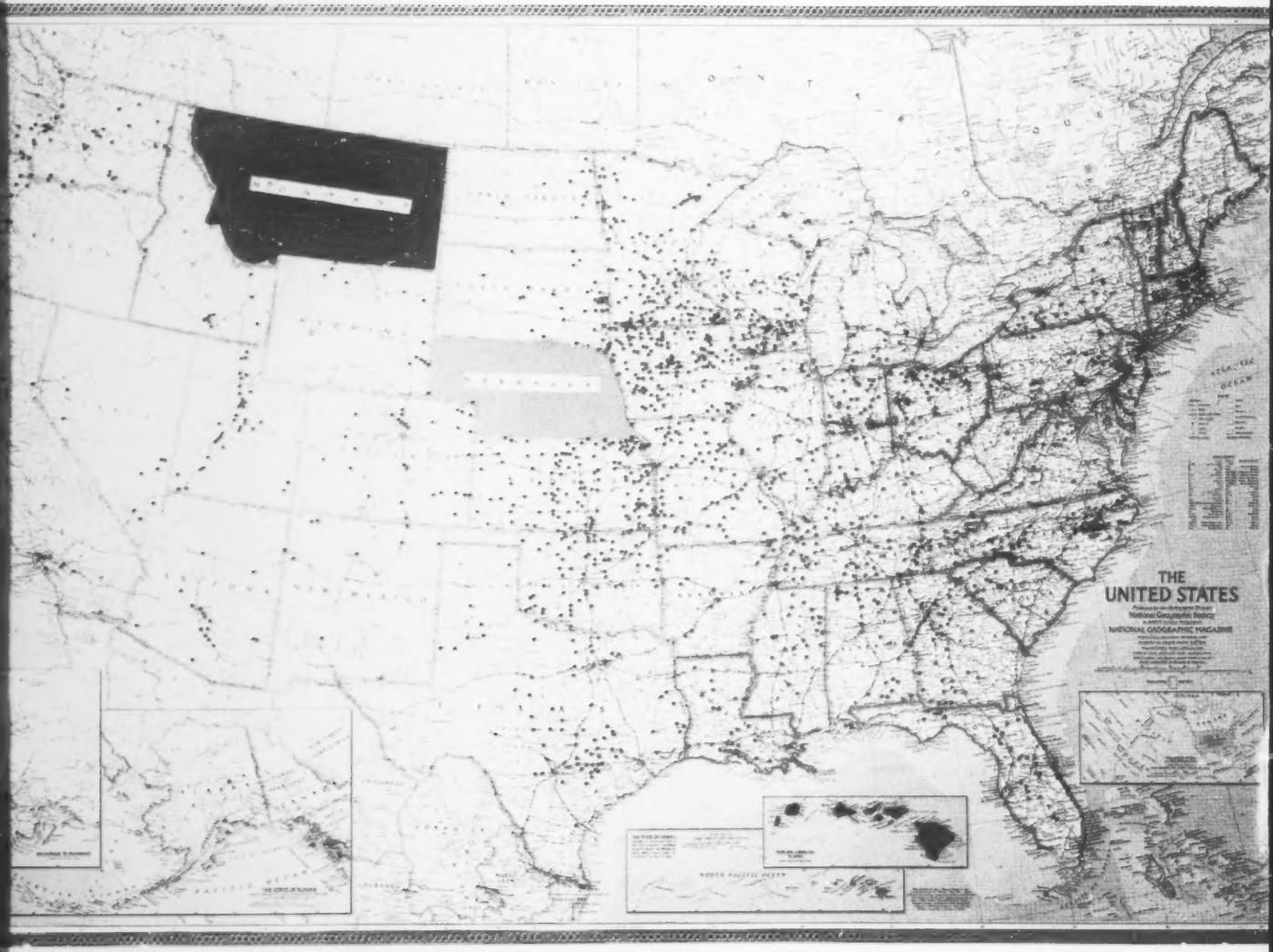
1 What You Need to Know About Those New Appliance Labels:
Cost per hundred _____
Quantity ordered _____ Total cost _____

2 Low-Cost, No-Cost Ways to Save Energy:
Cost per hundred _____
Quantity ordered _____ Total cost _____

Total Cost of This Order _____

Name _____ Title _____
Organization _____
Address _____
City _____ State _____ Zip _____

public power



1981 Directory

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public power

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Energy broker saves kwh page 24

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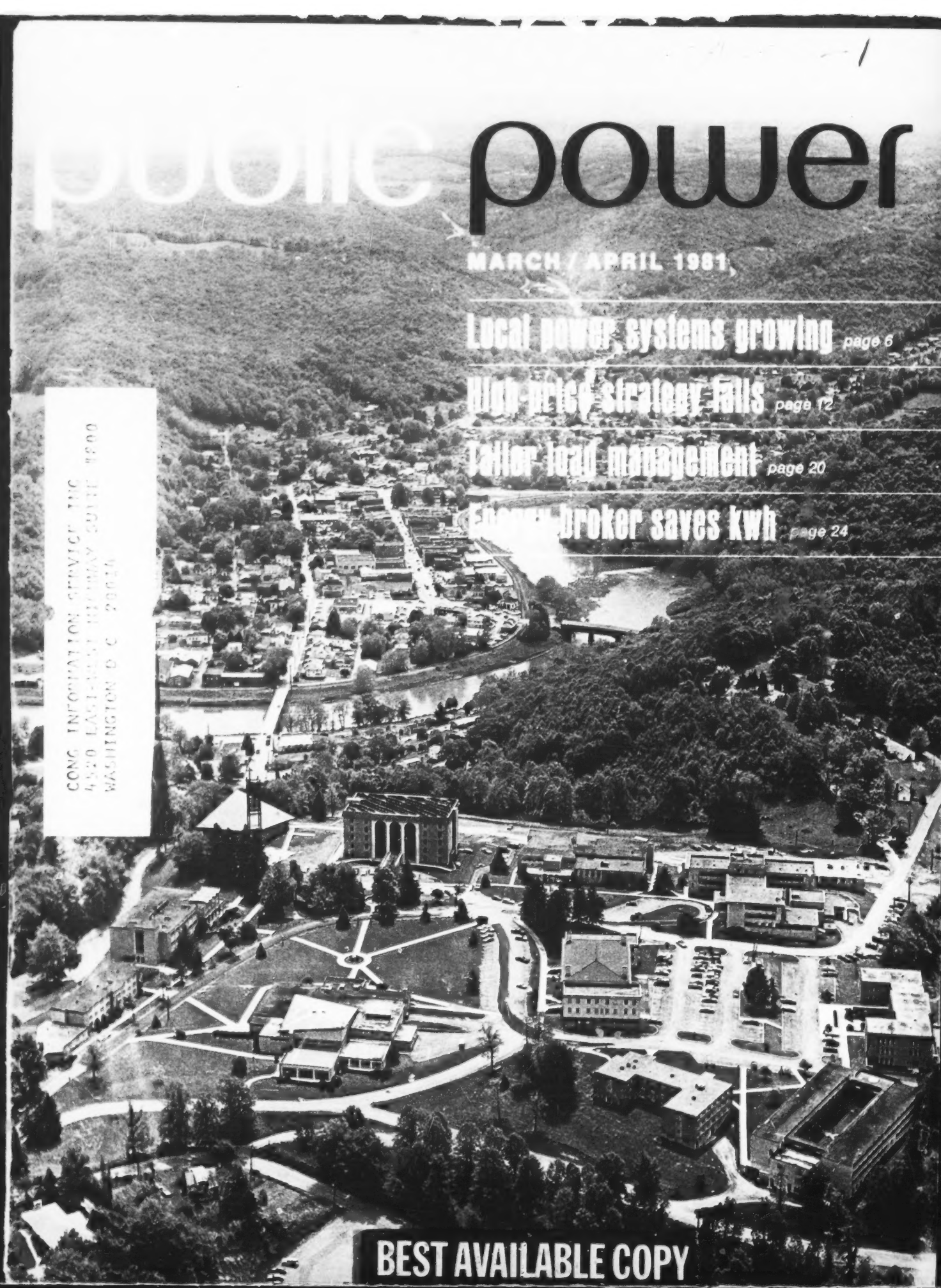

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public power

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VOLUME 39 NUMBER 2

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"In 1979 local public power systems increased their percentage of the market in six significant categories."

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"High energy prices exact a penalty on the economy which is out of proportion to the benefits we receive."

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30 LANSING BOARD MEETINGS ON TV by Dennis Casteele
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"We encourage state innovation, risk and new ideas."

40 NEBRASKA'S GA$-$AVER
Drivers line up before daybreak for their cars' free diagnoses.

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"Ann Cardillo is a role model for other women in local public power systems nationwide who aspire to similar positions."

46 'ESTABLISH CREDIBILITY' by Kathleen Pooler
"Today I rarely encounter an individual who is unable to accept a woman in what was traditionally a man's job."

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"Show you can do the job. This applies to everyone, not just minorities."

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FRONT COVER: Philippi, W. Va., whose load management program is described by Fred Durst (beginning on page 20), lies on the Buckhannon River in northern West Virginia. The Alderson-Broaddus College campus is in the foreground.
Photo by Armout Hyde Jr. for WONDERFUL WEST VIRGINIA

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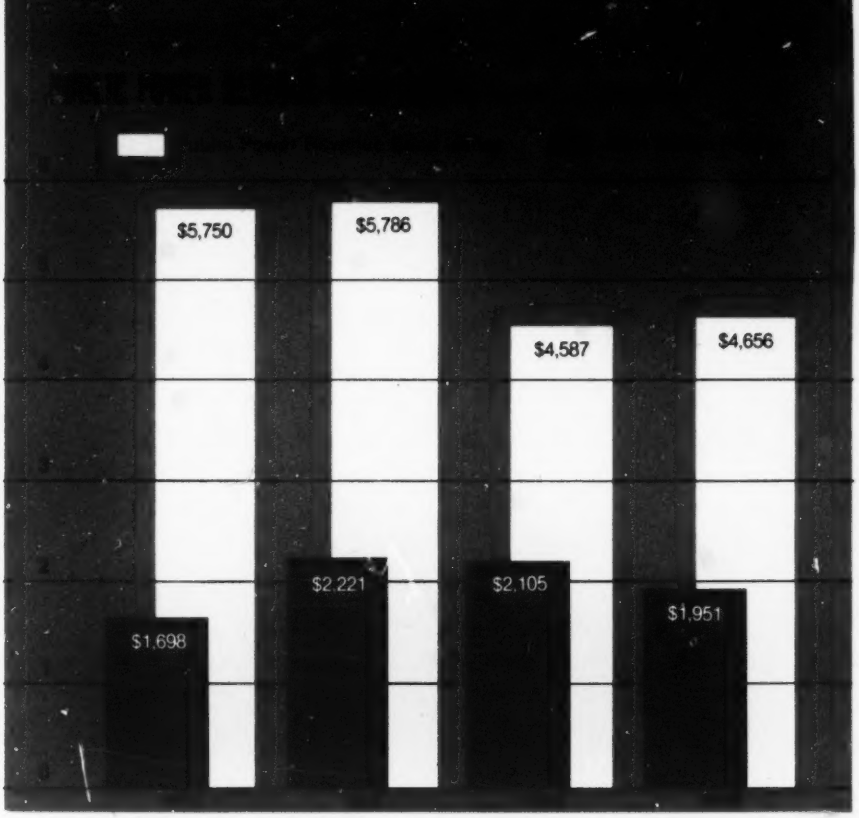
public power bond market holds steady



TAX-EXEMPT BOND SALES, which declined 8.7 percent from 1978 to 1979, increased by 10.5 percent to $46.3 billion in 1980. Volume in preceding years was $41.9 billion (1979), $45.9 billion (1978) and $44.9 billion (1977).

Local publicly owned electric utilities issued $4.656 billion worth of electric revenue bonds in 1980, a 1.5 percent increase from the $4.587 billion they sold in 1979.

Public power revenue bonds amounted to about 10 percent of all the tax-exempt bonds sold during 1980, compared with almost 11 percent in 1979, according to Lehmann Brothers Kuhn Loeb's annual compilation of tax-exempt bonds.

Public power electric revenue bonds sales by quarter, in millions of dollars, were:

	1979	1980
1st	$1,379	$ 701
2nd	1,059	770
3rd	869	2,340
4th	1,280	844

The largest single issue during the year was the New York Power Authority's $505,775,000 sale on Sept. 23.

Joint action agency bonds accounted for $1.951 billion of the public power bond total in 1980, almost 42 percent. In 1979 joint action agency bonds amounted to about 46 percent of the total. The six-year total of electric revenue bonds issued by joint action agencies—13 of them have now issued bonds—stands at $9.552 billion.

More than half of that amount—$5.215 billion—has been issued by one entity, the Washington Public Power Supply System. It issued $1.1 billion—56.3 percent—of the bonds issued by joint action agencies in 1980. It has now sold $5.2 billion of bonds since January 1975, 54.4 percent of the $9.552 billion sold by joint action agencies during the six year 1975-1980 period.

Public Power Joint Action Revenue Bonds

Year	Amount (000)
1975	$ 611,100
1976	965,000
1977	1,697,970
1978	2,221,540
1979	2,104,990
1980	1,951,370
6-Year Total	$9,551,970

Tax-Exempt Financing, 1980

	Amount (000)
All Public Power Electric Revenue Bonds	$ 4,655,569
Joint Action Public Power Electric Revenue Bonds (included in above)	1,951,370
Total Tax-Exempt Financing	$46,281,815

Total Bonds Issued by Major Joint Action Public Power Systems, 1975-1980

Issuer	Total (000)
Heartland Consumers Power District	$ 240,100
Massachusetts Municipal Electric System	26,100
Massachusetts Municipal Wholesale Electric Co.	672,870
Michigan Public Power Agency	44,370
Michigan South Central Power Agency	95,040
Municipal Electric Authority of Georgia	1,000,000
North Carolina Municipal Power Agency Number 1	650,000
Platte River Power Authority	332,100
City of Sikeston, Mo.	240,000
Texas Municipal Power Agency	850,000
Washington Public Power Supply System	5,215,000
Western Minnesota Municipal Power Agency	164,850
Wyoming Municipal Power Agency	21,540
6-Year Total	$9,551,970

NOTE

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public power

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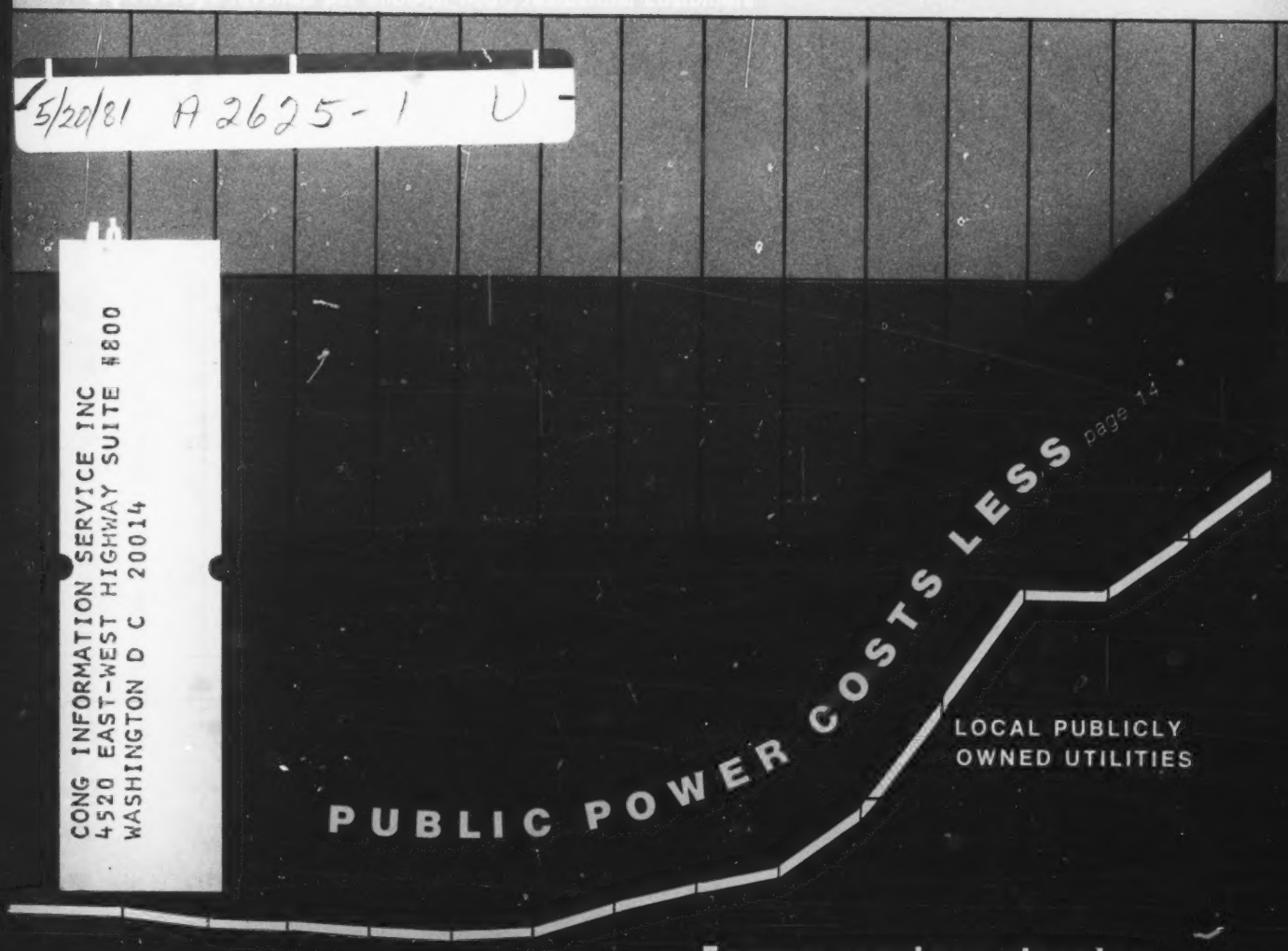
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public power costs less

IOU RESIDENTIAL RATES AVERAGED 44% HIGHER IN 1979

LATEST OFFICIAL FIGURES demonstrate once again that the consumer-owners of the nation's local publicly owned electric utilities continue to enjoy significantly lower electric rates than their neighbors served by private power companies.

Statistics for 1979 published recently by the Department of Energy's Energy Information Administration (EIA) continue the annual electric utility industry statistical series begun in 1946 by the former Federal Power Commission (FPC). In each of the 32 years of the federal publication of comparative statistics, the reports have shown that the local publicly owned segment of the pluralistic electric utility industry has been the leader in providing consumers with lower cost power.

The data appear in the EIA's publications of statistics for electric utilities, privately owned and publicly owned. These reports represent nearly 100 percent of the privately owned power utilities and a lesser portion of the publicly owned systems. The EIA's statistics for 1979 cover 205 private power companies and 162 local publicly owned electric utilities. EIA data for publicly owned utilities have been supplemented with data for an additional 110 municipal utilities published in *"1979 Operations, Municipal and Cooperative Distributors of TVA Power, TVA."* These 110 utilities were included in the EIA reports for 1978 and earlier years. The local public power data cited in this article do not include rural electric cooperatives or federal power operations.

In 1979, the average residential consumer in a local public power system used 31.5 percent more electricity than the average residential customer of the private power companies—10,940 kwh to 8,319 kwh. But the public power consumer paid 8.6 percent less on the average for 31.5 percent greater annual consumption—$352.43 to $385.70. Average residential revenue for the companies in 1979 was 4.64 cents per kwh, 44.1 percent higher than the public systems' average of 3.22 cents per kwh.

1.42¢ Per kwh Difference

Thus, on the average, residential customers of the private power companies paid more than one cent (1.42 cents) more for each kwh of electricity they used in 1979 than consumers served by local publicly owned electric utilities.

Revenue per kwh of electricity sold to residential consumers increased in

SALES TO RESIDENTIAL CONSUMERS[1]

	Average Annual kwh Consumption		Average Revenue Per kwh (cents)		Average Annual Bill (dollars)	
	Private	Public	Private	Public	Private	Public
1946	1,298	1,739	3.29	2.32	42.67	40.32
1950	1,767	2,518	2.95	1.99	52.14	50.06
1955	2,573	3,824	2.76	1.69	70.97	64.63
1960	3,454	5,208	2.62	1.58	90.51	82.46
1965	4,618	6,634	2.39	1.53	110.53	101.26
1966	4,931	7,007	2.34	1.50	115.37	105.13
1967	5,220	7,317	2.31	1.49	120.38	108.90
1968	5,706	7,880	2.28	1.47	128.43	115.93
1969	6,246	8,546	2.21	1.45	137.99	123.90
1970	6,700	9,015	2.22	1.47	148.92	132.89
1971	7,039	9,378	2.32	1.56	163.08	146.47
1972	7,391	9,630	2.42	1.63	178.96	156.95
1973	7,742	10,080	2.54	1.70	196.54	170.80
1974	7,550	9,797	3.10	1.94	233.85	190.54
1975	7,830	10,125	3.51	2.33	275.17	236.19
1976	7,840	9,539	3.78	2.79	295.94	265.76
1977	8,256	10,791	4.06	2.79	334.92	300.91
1978	8,453	11,383	4.31	3.00	364.35	341.23
1979	8,319	10,940	4.64	3.22	385.70	352.43

SALES TO COMMERCIAL AND INDUSTRIAL CONSUMERS[1]

	Average Annual kwh Consumption		Average Revenue Per kwh (cents)		Average Annual Bill (dollars)	
	Private	Public	Private	Public	Private	Public
1946	28,110	22,475	1.50	1.29	421.55	289.24
1950	33,653	25,124	1.54	1.33	518.55	334.40
1955	49,038	38,329	1.45	1.19	711.04	457.55
1960	61,944	49,421	1.49	1.22	922.71	604.69
1965	79,201	66,396	1.40	1.18	1,109.26	783.93
1966	85,265	70,557	1.37	1.16	1,168.58	818.81
1967	89,347	74,373	1.37	1.16	1,224.13	865.43
1968	96,332	79,687	1.36	1.15	1,307.14	916.71
1969	102,965	85,683	1.36	1.15	1,395.61	983.24
1970	107,041	89,653	1.40	1.17	1,502.43	1,052.87
1971	110,973	92,778	1.50	1.26	1,671.12	1,170.33
1972	117,793	98,384	1.58	1.31	1,863.05	1,294.31
1973	124,082	103,785	1.68	1.40	2,083.46	1,449.28
1974	121,112	102,974	2.19	1.64	2,655.04	1,693.43
1975	119,381	110,076	2.62	1.97	3,127.77	2,178.01
1976	125,296	111,414	2.82	2.38	3,531.09	2,654.90
1977	130,602	124,331	3.12	2.38	4,076.98	2,954.33
1978	132,610	129,874	3.39	2.65	4,497.61	3,444.14
1979	133,355	129,342	3.66	2.88	4,877.69	3,722.15

[1]*Care should be taken in the use of this data due to year-to-year variations in sample size.*

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1979 for both the privately owned and publicly owned electric utilities. In the case of the public systems, revenue per kwh of residential use went up from 3.00 cents per kwh in 1978 to 3.22 cents per kwh in 1979. For the private companies, average revenue per kwh of electricity sold to residential customers climbed from 4.31 cents to 4.64 cents in 1979.

In 1979, the average commercial or industrial customer of a private power company used 3.1 percent more power than the average commercial or industrial user served by a local public power system (133,355 kwh to 129,342 kwh). But the private company customer's annual bill was 31.0 percent more ($4,877.69 to $3,722.15).

Average commercial and industrial revenue for the privately owned companies, 3.66 cents per kwh, was 27.1 percent higher than the 2.88 cents per kwh for the publicly owned systems.

Average commercial and industrial revenue per kwh was higher in 1979 than in 1978 for both the private and publicly owned utilities--up from 3.39 cents to 3.66 cents per kwh for the companies, and from 2.65 cents to 2.88 cents per kwh for the public systems.

Managerial Expenses Compared

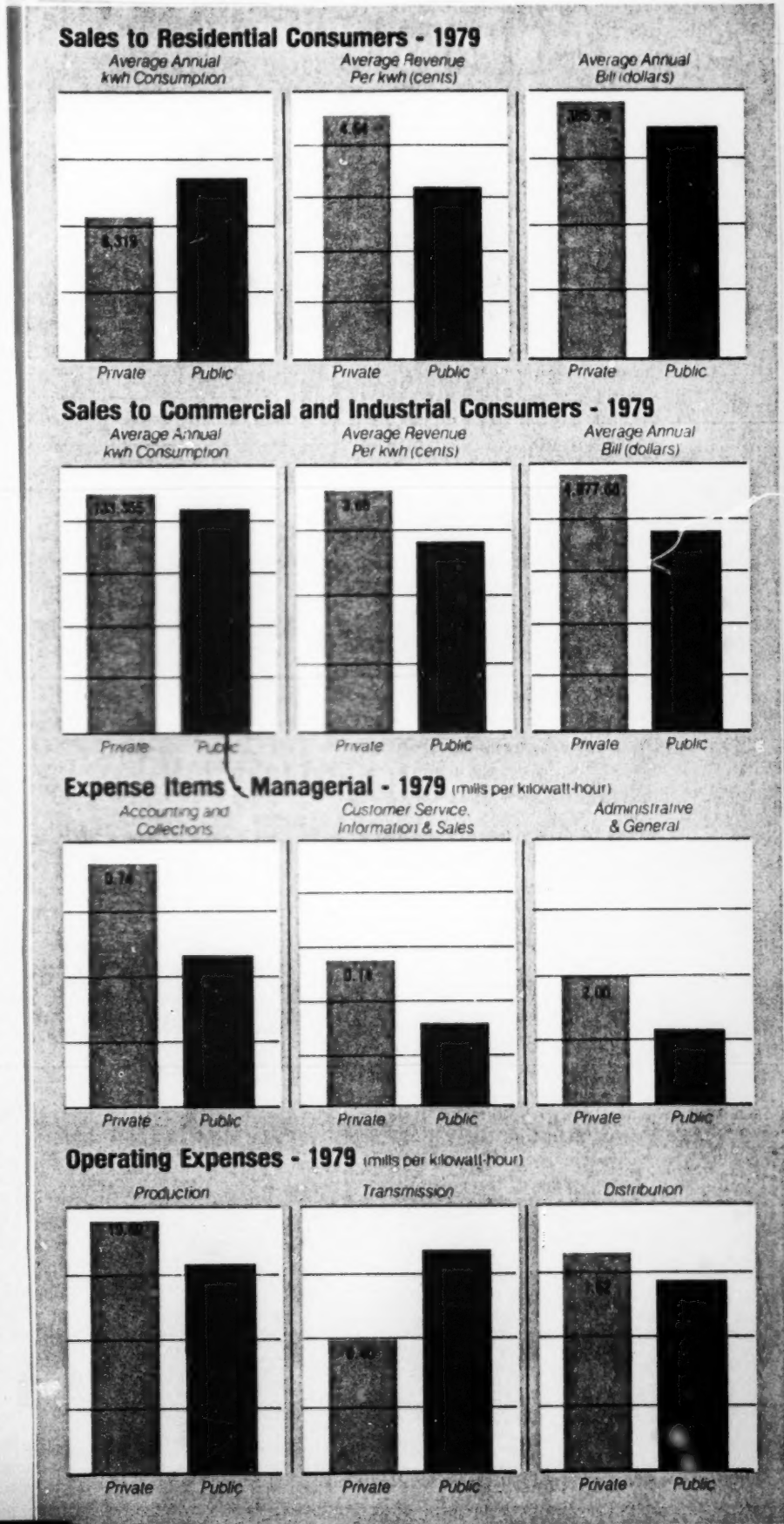
Administrative and general expenses reported by the public systems were lower than the private power companies' on the basis of expense per $100 of revenue ($4.24 to $5.21) and on the basis of kwh sold (1.14 mills per kwh for the publicly owned systems compared to 2.00 mills per kwh for the companies).

Accounting and collections per customer cost the investor-owned utilities (IOUs) $20.25 in 1979, compared with $16.41 for the publicly owned utilities. This cost was $1.66 higher than 1978 for the IOUs and rose $0.54 for the public systems.

On the basis of kwh sales, accounting and collections cost the companies 0.74 mills per kwh, compared with 0.44 mills per kwh for publicly owned utilities.

In 1979, the private power companies spent 38 cents of each $100 of revenue for customer service, information and sales expenses (previously reported as promotion and advertising expenses), up 2 cents from 1978; the publicly owned systems spent 29 cents of each $100 of revenue for this item, up 7 cents from the previous year.

Customer service, information and sales expenses of the companies were 0.14 mills per kwh sold, compared with



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0.08 mills for the public power systems. Production costs per kwh were lower for the public systems than the companies in 1979—for the 10th consecutive year.

Production Costs Up

In 1979, both the privately owned utilities and the public power systems experienced sharp increases in production costs over the previous year: from 17.27 mills per kwh in 1978 to 19.69 mills per kwh in 1979 for the companies; and from 14.37 mills per kwh to 16.32 mills per kwh in 1979 for the publicly owned utilities.

Distribution expenses per customer rose for both types of systems in 1979—from $34.81 in 1978 to $37.68 in 1979 for the companies, and from $35.94 in 1978 to $38.17 in 1979 for the public systems. Distribution expense for the companies was 1.62 mills per kwh sold to ultimate customers, compared to 1.44 mills per kwh sold to ultimate customers by the publicly owned utilities.

For only the third year since the federal statistics have been published, IOU transmission costs were lower. In 1979 their transmission expenses per kwh sold rose to 0.40 mills, up from 0.37 mills in 1978 and 0.35 mills in 1977; the public systems' transmission costs in 1979 were 0.67 mills per kwh, up from 0.64 mills in 1978 and 0.54 mills in 1977.

The publicly owned electric utilities had electric operating revenue of 2.69 cents per kwh sold in 1979, while the privately owned electric utilities had operating revenue of 3.84 cents per kwh. The private companies had interest charges which equaled 0.33 cents for each kwh sold and dividends on preferred and common stock equal to, respectively, 0.10 cents and 0.30 cents per kwh sold. The publicly owned utilities had total income deductions equal to 0.35 cents per kwh sold in 1979.

The cost of debt and equity capital for the privately owned utilities was equal to 17.1 percent of their operating revenue. The public systems, which do not pay dividends to private stockholders, paid the equivalent of 13.2 percent of their operating revenue as interest on long-term debt and for other income deductions.

These latest statistical reports show that in 1979, as in the previous 33 years since the comparative statistics have been published, the local publicly owned electric utilities are leading the industry in providing economical electric service to consumers.

EXPENSE ITEMS

OPERATIONS

	Production		Transmission		Distribution	
	Per kwh Sold (in mills)		*Per kwh Sold (in mills)*		*Per Customer (in dollars)*	
	Private	*Public*	*Private*	*Public*	*Private*	*Public*
1946	4.35	4.30	.27	.14	9.37	9.19
1950	4.96	4.68	.26	.13	12.04	11.77
1955	4.42	4.68	.26	.13	14.18	13.79
1960	4.20	4.70	.25	.15	16.19	10.24
1965	3.98	4.34	.21	.15	17.48	17.93
1966	4.01	4.36	.21	.16	17.84	18.54
1967	4.03	4.31	.21	.15	18.67	19.37
1968	4.09	4.16	.21	.15	19.31	20.43
1969	4.21	4.23	.22	.13	20.56	22.88
1970	4.76	4.61	.23	.15	22.14	24.15
1971	5.49	5.25	.24	.16	22.82	25.41
1972	5.97	5.71	.25	.16	24.13	26.02
1973	6.70	6.47	.26	.17	25.52	27.53
1974	10.72	8.01	.29	.18	26.46	29.98
1975	12.70	9.35	.31	.21	27.63	31.78
1976	13.73	12.04	.34	.29	29.51	34.18
1977	15.87	13.28	.35	.54	31.76	33.78
1978	17.27	14.37	.37	.64	34.81	35.94
1979	19.69	16.32	.40	.67	37.68	38.17

MANAGERIAL

	Accounting and Collections Per Customer (in dollars)		*Customer Service Information and Sales Per $100 Revenue (in dollars)*		*Administrative and General Per $100 Revenue (in dollars)*	
	Private	*Public*	*Private*	*Public*	*Private*	*Public*
1946	3.73	2.82	1.77	1.03	7.22	6.11
1950	4.44	3.35	1.79	1.11	7.09	6.85
1955	5.33	4.00	1.73	.95	6.73	6.59
1960	6.38	4.94	1.70	1.04	6.29	6.31
1965	7.06	6.15	1.79	1.14	6.23	5.80
1966	7.18	6.13	1.83	1.09	6.00	5.84
1967	7.34	6.48	1.79	1.10	5.87	6.23
1968	7.68	6.78	1.75	1.10	5.70	6.10
1969	8.11	7.36	1.69	1.08	5.74	6.08
1970	8.86	7.98	1.54	1.01	5.87	6.25
1971	9.61	8.77	1.30	.89	5.84	6.06
1972	10.31	9.18	1.00	.80	5.88	5.96
1973	11.33	9.55	.74	.67	5.78	5.79
1974	13.26	10.61	.42	.50	5.19	5.65
1975	15.25	12.33	.30	.35	4.98	5.14
1976	16.34	14.50	.27*	.28	4.99	5.09
1977	17.17	12.75	.36	.22	4.94	4.68
1978	18.59	15.87	.36	.22	5.11	4.64
1979	20.25	16.41	.38	.29	5.21	4.24

(*)"Customer Service, Information and Sales" was formerly listed as "Promotion and Advertising." The 1976 and subsequent year figures reflect a federal reporting change which combined sales expenses with customer service and information expenses.

more IOU tax favors?

by CARL GOLDFIELD

APPA assistant legislative representative and contributing editor, PUBLIC POWER

WHILE IT IS STILL NOT CERTAIN IF Congress will agree, the Reagan administration is out to convince the public that economic woes can be solved by a tax cut. The investor-owned utilities (IOUs) have not been reluctant to angle for their share of any goodies which Congress decides to hand out to industry, despite the fact that their tax burden is not exactly what you would call heavy at this point.

According to the Department of Energy's *Statistics of Privately Owned Electric Utilities in the U.S.—1979*, the 205 largest investor-owned electric utilities had gross revenues of approximately $87 billion in 1979. Their net profits were approximately $9.5 billion. Yet at the same time they paid only $517 million in taxes.

Stated differently, the IOUs paid only one-half of 1 percent of their gross revenues and 5 percent of their net income in taxes. In 1978 these figures for the IOUs were 1 percent and 6 percent respectively and in 1977 they were 1 percent and 5 percent.

In recent testimony before the Federal Energy Regulatory Commission and in a letter to the under secretary of the treasury for tax policy, the Edison Electric Institute (trade association of the IOUs) delivered a list of new tax favors it hopes for, including:

- equal access to the Reagan administration's 10-5-3 accelerated depreciation proposals and liberalized investment tax credit (10-5-3 is not a fertilizer and is explained below);
- accelerated depreciation on construction work in progress;
- deferral of taxes on reinvested dividends;
- access to the energy tax credits contained in the 1978 Energy Tax Act and the 1980 Crude Oil Windfall Profits Tax Act;
- tax-exempt bonding authority for oil-to-coal conversions; and
- current deductions for nuclear plant decommissioning and nuclear fuel disposal costs to be incurred in the future.

'10-5-3' Proposal Is Key

The 10-5-3 proposal is at the heart of the Reagan administration's tax relief package for business. The numbers represent categories of business property corresponding to the number of years in which property falling within the category may be depreciated for tax purposes. The three-year category includes automobiles, light trucks and machines and equipment used in research and development; the five-year class consists of machinery and equipment; and the 10-year class consists of factory buildings, retail stores and warehouses.

While the IOUs stand to benefit substantially from 10-5-3 they are disappointed that their long-lived equipment is placed in the 10-year category rather than the five-year category into which it would otherwise fall. The rate of depreciation is still pretty amazing, however. For instance, a piece of utility equipment such as a boiler, which has a life of 35 years, would be fully depreciated for tax purposes in only 10 years. Nevertheless we can expect to see efforts made on behalf of the IOUs preferred five-year depreciation.

With normal or straight-line depreciation the taxpayer writes off the asset by an equal amount each year of its life. Accelerated depreciation, which the IOUs have access to now, allows write-off of equipment for tax purposes at a fast rate. The result is large depreciation deductions at the beginning of the life of an asset and smaller ones later.

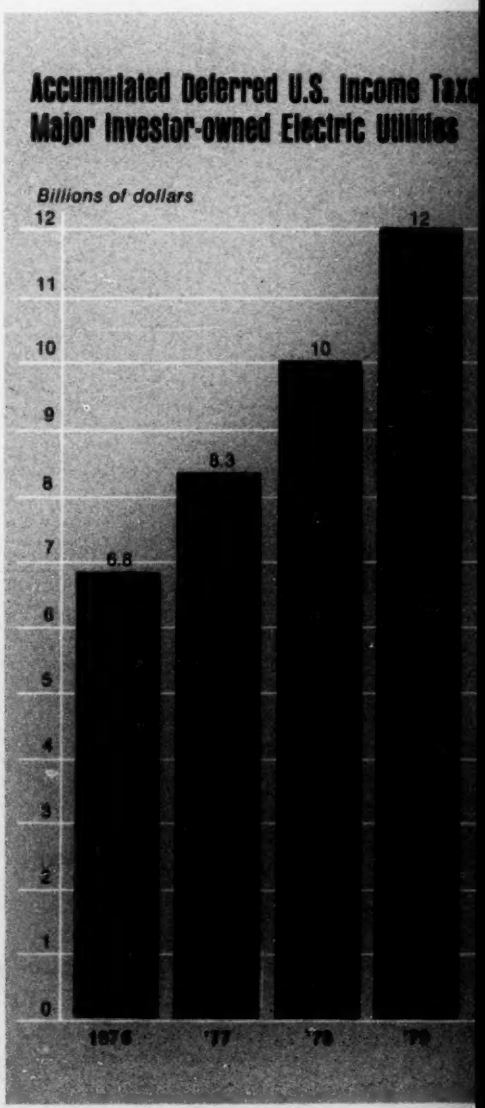
In effect, accelerated depreciation permits the taxpayer to delay the payment of taxes. In the case of public utilities it is like an interest-free loan from the U.S. Treasury made with ratepayers' dollars.

This is because the tax code requires regulatory commissions to permit the IOUs to use an accounting procedure called normalization. With normalization the IOUs report tax payments for the purpose of ratemaking as if the utility were using straight-line rather than accelerated depreciation.

In other words, for purposes of charging the ratepayers the utility acts as if it has been paying higher taxes than it actually has. It collects for taxes it has never paid.

$12 Billion Unpaid

The money which the IOUs collect from



ratepayers, but have not paid to the federal government, are listed in an accumulated deferred income tax account. According to the official accelerated depreciation statistics, the largest IOUs had through 1979 collected approximately $12 billion in "taxes" which they never paid to the government. This compares to $10 billion in the account as of 1978 and $8 billion as of 1977.

Supposedly at some point these accounts come due and the IOUs pay their tax bill. However, there is some doubt as to whether the payback will ever occur. As the IOUs continue to invest (especially in a period of inflation) they have continuing large depreciation deductions to postpone any payment on the accounts. As the figures above demonstrate these accounts just continue to grow.

The 10-5-3 scheme will permit the IOUs even faster depreciation deductions which (and it should come as no surprise) under the Reagan scheme would be normalized. This would permit the IOUs to collect even larger amounts of unpaid taxes from ratepayers. Not to worry though—it's all in those accounts!

One of the more radical departures of the Reagan administration depreciation proposal is that it permits depreciation to begin *before* construction work is completed and the asset is placed in service. Put simply it permits depreciation on construction work in progress (CWIP).

Squeeze Regulatory Commissions

The IOUs don't want the administration to stop there. They figure they can use the tax break as leverage to get CWIP in the rate base as well. Taking a lesson from the past (i.e., the treatment of tax credits) they are pushing to make the CWIP tax benefit dependent on regulatory commissions allowing both CWIP in rate base and normalization.

That puts the regulatory commissions just where the IOUs want them. The commissions can either forego the tax benefit for the IOU and be subject to criticism for not taking advantage of a federal benefit to the companies or they can permit CWIP and normalization.

Something has to be said for the magical talents of the IOUs. If they get this point accepted by Congress they will—out of thin air, right before your eyes!—manage to create double benefits from an asset which has not seen service.

The Reagan administration is also increasing the investment tax credit for property which falls within one of the 10-5-3 categories. The administration proposes to do this by increasing the percentage of the cost of an investment which qualifies for the 10 percent investment tax credit.

Interest-Free IOU Loans

Tax credits in combination with normalization accounting are another means of forcing ratepayers to make interest-free loans to the IOUs. When an IOU makes an investment the government pays for part of it through the investment tax credit. It is a forgiveness of tax. While ratepayers get the benefit of the tax credit over the life of the investment the utility enjoys the forgiveness immediately.

Consumers are charged as if the tax credit had been received slowly rather than all at once as is actually the case. In effect they are loaning money to the IOU which pays them back over time.

Worse yet, under present law normalization forces ratepayers to pay a rate of return on an investment portion which was paid out of tax dollars. (The

South Carolina Public Service Authority
(Santee Cooper)

$25,000,000

Electric Revenue Notes, 1981

$75,000,000

Electric System Expansion Revenue Bonds, 1981 Series A

The undersigned acted as financial advisor to South Carolina Public Service Authority in this transaction.

LAZARD FRÈRES & CO.

Federal Income Taxes of 25 Largest Investor-Owned Electric Utilities, 1979.

Company Name	Gross Revenue (000)	Net Income (000)	Federal Income Taxes (000)	Taxes Paid As % Of Net Income 1979	Taxes Paid As % Of Net Income 1978**	Taxes Paid As % Of Net Income 1979	Taxes Paid As % Of Net Income 1978**
Pacific Gas & Electric Co.	$4,970,409	$458,234	$28,974	6	17	0.6	2
Consolidated Edison Co. of New York, Inc.	3,396,230	323,912	77,200	24	27	2	3
Commonwealth Edison Co.	2,878,901	296,678	−8,906	—	6	—	0.4
Southern California Edison Co.	2,683,568	346,219	−1,217	—	4	—	1
Public Service Electric & Gas Co.	2,464,035	233,329	17,591	8	5	0.7	1
Consumers Power Co.	2,092,498	203,787	90	0.04	—	0.004	—
Florida Power & Light Co.	1,966,837	204,665	9,961	5	35	0.5	4
Virginia Electric & Power Co.	1,771,772	196,467	8,688	4	12	0.5	2
Houston Lighting & Power Co.	1,745,075	165,715	10,910	7	7	0.6	1
Detroit Edison Co.	1,740,403	176,029	8,233	5	5	0.4	0.5
Duke Power Co.	1,638,846	274,760	10,542	4	11	0.6	2
Philadelphia Electric Co.	1,622,763	194,471	2,277	1	—	0.1	—
Georgia Power Co.	1,607,381	180,298	13,883	8	—	0.8	—
Niagara Mohawk Power Co.	1,549,214	156,030	1,618	1	5	0.1	1
Northern Indiana Public Service Co.	1,218,555	76,859	4,252	6	6	0.3	0.4
Alabama Power Co.	1,206,867	88,659	−4,814	—	3	—	0.2
Long Island Lighting Co.	1,116,394	161,663	−1,616	—	4	—	1
Ohio Power Co.	1,064,286	141,749	10,371	7	.2	1	.02
Baltimore Gas & Electric Co.	1,028,308	126,316	9,893	8	36	1	4
Northern States Power Co.	1,014,356	120,678	33,628	28	50	3	6
Carolina Power & Light Co.	989,061	153,244	−5,145	—	23	—	3
Gulf States Utilities Co.	934,999	84,181	−8,420	—	*	—	*
Ohio Edison Co.	919,749	134,807	1,570	1	—	0.1	—
Pennsylvania Power & Light Co.	908,220	182,198	14,299	7	7	2	1
Union Electric Co. (Mo.)	876,011	118,055	−8,011	—	17	—	2

*Gulf States Utilities Co. was not among the top 25 investor-owned electric utilities in 1978.

**1978 tax data on the 25 largest IOUs was published in the March-April 1980 issue of PUBLIC POWER, p. 35.

Note: All figures are taken from the "Income and Retained Earnings" table contained in the publication *Statistics of Privately Owned Electric Utilities in the United States—1979* issued by the Energy Information Administration of the U.S. Department of Energy. They reflect income and taxes on a company-wide basis. A negative number for federal income taxes represents either a refund of back taxes or credit for future taxes.

Reagan tax proposals are somewhat of an improvement in this regard since they permit regulatory commissions to reduce rate base as well as cost of service to account for the tax credit.)

As in the case of accelerated depreciation the loan from the ratepayers is reflected in deferred tax credit accounts by the IOUs. By the end of 1979 the amount owed to ratepayers on account of the investment tax credit had grown to $6.3 billion. In 1978 the figure had been only $5.2 billion and in 1977 $4 billion.

Tax-Exempt IOU Financing

Finally we come to the issue of tax-exempt financing. Some IOUs claim that tax-exempt financing gives public power an unfair advantage, but lo and behold it turns out that the IOUs use it too!

They call it tax-exempt pollution control bonds. To quote THE WEEKLY BOND BUYER, in its review of the 1980 market for these issues: "Electric utilities continued, as always, to be the chief beneficiaries of pollution control financing."

The dollar volume of pollution control bond was $2.46 billion in 1980. The IOUs got the benefit of a full 58 percent of that total. Apparently the IOUs like this form of "tax advantage" because as I noted they are seeking tax-exempt financing for oil-to-coal conversion. So much for principle.

Well, it can all be summed up in a single sentence. The IOUs as a group do not pay much in the way of taxes—and they would like to pay less. The Reagan administration seems amenable to helping them achieve that goal.

Consumer-Owned Systems Hurt

The administration's actions certainly give the lie to popular opinion that it is taking a meat ax to the budget. On the contrary the administration is using surgical precision. In the case of electric utilities they are engaged in transplants from the consumer-owned segment of the industry to the investor-owned sector.

The donors are the rural electric cooperatives and the Tennessee Valley Authority (TVA). The administration has proposed that TVA and the Rural Electrification Administration (REA) no longer have access to the Federal Financing Bank (FFB) for their bond issues. Access saves them about one percentage point on each issue while at the same time making money for the federal government.

The FFB is a sound device which markets federal agency bonds so that all of the agencies will not compete with each other and drive up interest rates. In this fashion it saves unnecessary interest payments. Thanks to Sen. Howard Baker, R-Tenn., TVA will retain FFB financing at least for a while so the issue can be studied.

REA borrowers have not been so lucky. The Reagan administration plans to move ahead and cut off REA access to the Fedeal Financing Bank. The Reagan administration also has proposed to end all 2 percent loans for electrification, eliminate all loans for power supply purchases and reduce the principal amount of direct loans disbursed annually by 25 percent.

NOTE

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—Photo by John Cullen, Kossuth County Advance

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The French nuclear program includes various incentives to persons who work at or live near nuclear plants. An example is the village, in foreground, constructed for power station workers at the Gravelines power station in the background.

why France went nuclear

by **REMY CARLE**

THE 1973 OIL CRISIS, with a supply embargo followed by a fourfold price increase, made France acutely aware of her vulnerability and dependence. At that time oil accounted for two-thirds of the country's total energy supply. Imported natural gas and coal raised overall reliance on foreign sources to more than 75 percent. How could this stranglehold be loosened?

Our national oil, gas and economically recoverable coal resources were marginal and would not increase in the future. Hydroelectric power would continue to make a significant contribution, but possible developments in this field were directed more to increasing storage capacity than to increasing energy production significantly.

Consequently, nuclear power—whose technology had already been mastered by France—was the only source capable of reducing the nation's dependence on foreign energy supplies.

The 1979 oil crisis brought further confirmation of the validity of the French government's choices made in 1973. The objectives laid down for 1990 will result in a more balanced and less vulnerable energy supply.

- 30 percent from oil (versus 66 percent in 1973);
- 30 percent from nuclear electricity (1.5 percent in 1973);
- 30 percent from coal and natural gas; and
- 10 percent from renewable sources, half from water power.

Dependency on energy imports will be reduced to 55 percent by 1990. Electricity will account for 40 percent of total French energy consumption. In 1980 French electricity consumption was 248 billion kwh; this will rise to 450 billion kwh by 1990.

65,000 mw Nuclear by 1990

To meet this demand, our installed nuclear capacity will by then have reached 65,000 mw, mainly from pressurized water reactor (PWR) power stations with unit capacities of 900 mw and 1,300 mw. This nuclear capability alone will produce 320 billion kwh, or

---

Editor's note: This is the first of occasional articles PUBLIC POWER has asked several authors to prepare regarding electrical supply in foreign countries. Carle is a director of Electricité de France (EdF), the nationalized electricity authority in France. The article was written shortly before the May change in government there. A spokesman for EdF told PUBLIC POWER the change may halt future nuclear breeder construction except for the Super-Phenix, scheduled for completion in 1983. EdF does not expect definitive decisions on possible changes in energy policy until this fall.

73 million tons oil-equivalent.

Figures of this kind cannot be put forward without some explanation. First of all, what are the reasons underlying this basic choice? It is necessary to consider facts which are not always fully appreciated:

(1) The increase in world oil consumption is no longer offset by new discoveries, which barely compensate for worked-out deposits.

(2) Global energy demand can be expected to continue to increase sharply, due to pressure from the developing countries. Their current population of not quite three billion will rise to nearly seven billion over the next 40 years.

(3) These inadequately industrialized countries must have priority access to the least sophisticated sources of energy, such as oil. Even allowing for significant reduction in the per capita consumption of oil, the level of overall consumption on the world scale can still be expected to increase.

(4) Coal holds out great prospects, but presents troublesome problems of deployment regarding space, handling and pollution, including environmental damage.

(5) Efforts must of course be made to develop what are known as the "alternative" sources of energy, but several decades will pass before these make an impact in quantitative terms.

Last but not least, nuclear generation is by far the cheapest way of producing electricity in France. For a nuclear power station commissioned in 1990, the production cost per kwh is reckoned at only 58 percent of that for a coal-fired equivalent and no more than 29 percent of that using oil. And in contrast with the position for fossil fuels, 90 percent of the cost of the nuclear electricity program is paid out inside France.

In the long term the aim is to provide indigenous energy, reduce import of fossil fuels and improve the balance of payments.

Continuing economic growth, even at a lower rate than in the past, is essential to a policy of rational energy use and the substitution for oil of new primary sources. These aims imply a high capital investment capacity that in turn must be supported by sustained economic growth. Although it may be possible to slacken the link between economic growth and increased energy consumption, the two factors will never be totally independent of each other.

Financial Requirements

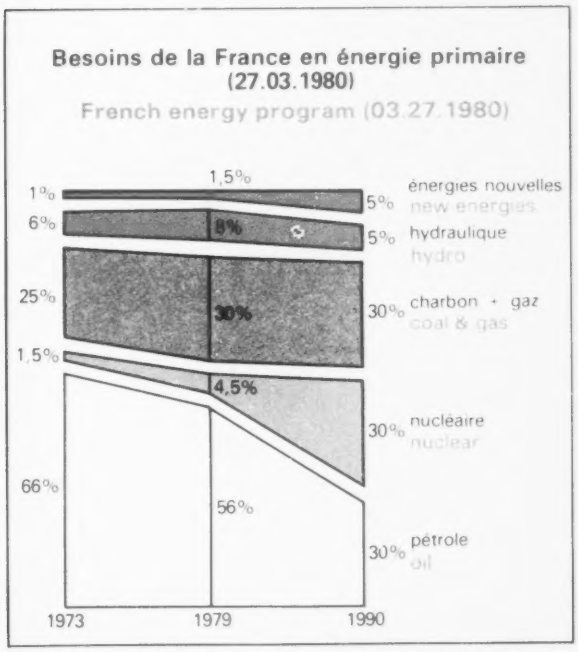
In the light of these ambitious objectives, two very different questions inevitably arise:

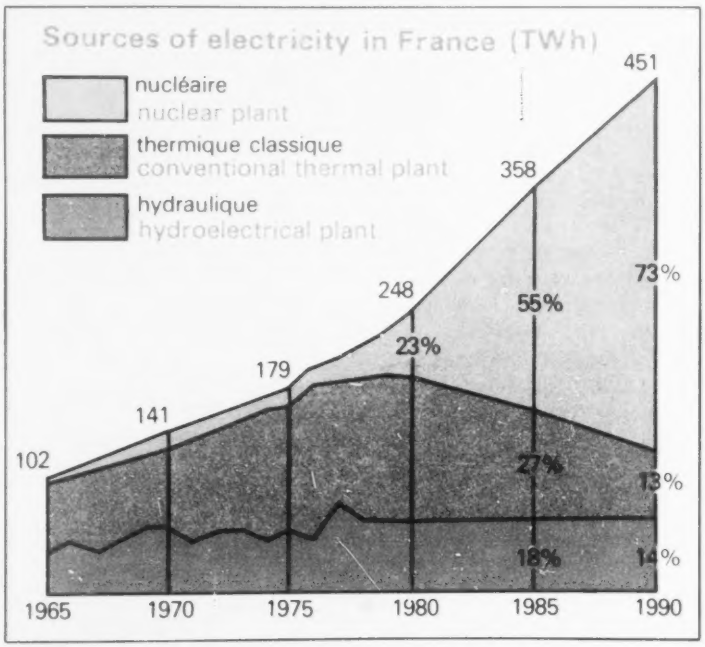
- First, how can a country in the situation of France face up to the financial demands of such a heavy investment program? As a corollary to this, are these appropriations not bound to place an excessive burden on the national budget?
- Secondly, what is the extent of the anti-nuclear movement in France? Is it not likely to prevent such objectives from being achieved?

The importance of the first of these objections should not be overestimated. When the financial burden falls heaviest, this year and next year, the overall investment outlay made by Electricité de France (EdF)—the French electricity authority—will not be more than 5 percent of the country's total investment bill. This proportion has been reached before, in 1960, at the peak of the hydroelectric construction plan.

Furthermore, in the years ahead, the savings made on oil purchases will be on a scale comparable to that of the financing requirements of the nuclear electricity program. It can thus be said that the cost of this program is within the country's capacity. In addition, it is helping to sustain economic activity at a particularly difficult time.

The real financial problem involved is that of sharing the cash levy between the consumers, the state as sole owner of EdF, and the financial market. This is a political, rather than economic, area of decision.





Anti-Nuclear Attitudes

Financial problems are always easier than human problems to solve. The nuclear program, erupting suddenly on the scene and releasing passionate controversy, meets its greatest obstacle on the human level.

The French anti-nuclear movement is very real, but does not have the same characteristics as in other countries

where alternative solutions to the energy problem may be easier to advocate and implement.

An anti-nuclear minority emerged in France about 1970, when the first 900-mw PWR power stations were built at Fessenheim. Anti-nuclear protest reached its peak, however, in 1977, with the decision to build a 1,200-mw breeder reactor at Creys-Malville. Violent incidents involving 20,000 demonstrators occurred on the site.

Since then, however, the situation has evolved somewhat more favorably toward nuclear power—at least on the countrywide level. The public has become aware of dangers to energy supply such as the revolution in Iran, the dizzy climb of fuel prices and, on another plane, the power failure which on Dec. 19, 1978, affected virtually all France. At that time it was observed that the first PWR plants were operating without trouble.

Nevertheless, genuinely determined opposition exists at local levels near intended nuclear plant sites. It is centered in areas with a strong undercurrent of regionalism, where small farmers and craftsmen are prominent. There the nuclear plants are seen as the spearhead of central government interference; anti-nuclear protest is above all a convenient vehicle carrying a host of political recriminations covering a wider field.

Those parts of France which have a long commercial history, such as the Rhone and Loire regions, and industrial zones as in northern France, look upon nuclear development as a rather welcome contribution to their economic progress. On the other hand, nuclear projects always meet opposition in the conservatively rural regions of Brittany and Roussillon. However, all such opposition virtually evaporates as soon as construction starts.

Information Program Pushed

In this context, EdF attaches great importance to information and communications. We must answer the public, but always endeavor to make the point that nuclear generation is only one feature of the energy supply problem. In other words, we stress that EdF is not a nuclear operator, but a supplier of energy which uses various sources.

EdF sends out more than 50,000 documents each month in answer to inquiries. More than 200,000 people visited nuclear power stations in 1980. Numerous documentary films are produced and displayed. We found the public is more interested in comparing the merits of different primary sources of energy than in investigating nuclear techniques specifically.

Nuclear Incentives

It is also necessary to discuss site selection with the local population. Perhaps surprisingly, local politicians sometimes request nuclear power stations in the constituency where they were elected.

There is a ready explanation for this. Construction and operation of a nuclear plant provide local resources and employment on a large scale, particularly welcome in economically backward areas. Construction of four reactor units on a given site generates roughly 10 years of employment, a labor force of about 3,000 at peak periods, a monthly payroll of $2 million, and a total capital outlay of some $1.4 billion. Furthermore, construction of a power station always generates a whole program of related works—roads, amenities, utilities and housing.

For several years special arrangements have been made to ensure that a significant share of the contracting work is awarded local firms. Technical training centers near some sites train local workers. Such efforts are an essential contribution in the current context of a difficult employment situation.

When the power station starts operating, it requires 800 engineers and technicians who, with their families, increase the permanent local population by 2,000. Here again, every effort is made to ensure that a part of the establishment is recruited locally.

Although Electricité de France is a nationalized corporation, it is also an

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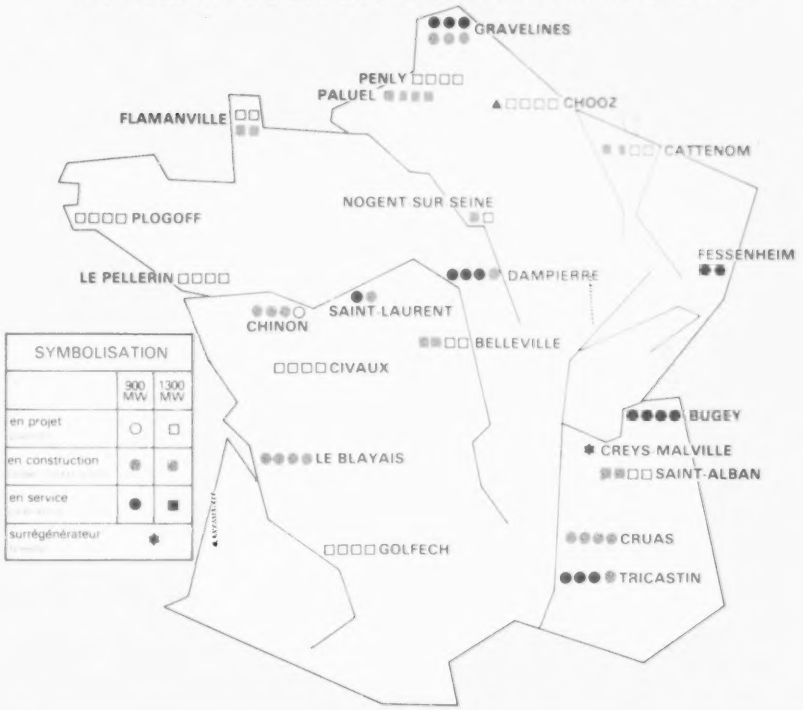
PROGRAMME NUCLEAIRE FRANCAIS APRES 1970
FRENCH NUCLEAR PROGRAM AFTER 1970



PUISSANCE NUCLEAIRE SUR LE RESEAU MW
NUCLEAR CAPACITY ON THE GRID MW

Année Year	Couplée Connected	Totale Total	Année Year	Couplée Connected	Totale Total
1977	1780	4763	1984	6535	37418
1978	1840	6603	1985	6045	43463
1979	1800	8403	1986	4290	47753
1980	6400	14803	1987	5080	52833
1981	7240	22043	1988	6365	59198
1982	4510	26553	1989	5110	64308
1983	4330	30883			

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WHY FRANCE WENT NUCLEAR

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industrial and business undertaking subject to corporate taxes. For a plant comprising four 900-mw units, the amount of tax accruing to the local authorities is about $10 million per year. Also, the government recently decided to grant price concessions to residential and business customers near nuclear power stations.

The French nuclear electricity program would not be feasible without the support of a national engineering and industrial fabric capable of handling the complete fuel cycle, including the reprocessing and storage of nuclear waste. Capacity of the reprocessing plant at La Hague will be raised to 650 tons per year by 1985 and 1,600 tons per year by 1990. As of 1990 it will be the only major unit in the world capable of offering reprocessing facilities to foreign countries.

Reprocessing isolates highly radioactive waste whose reduced dimensions make them suitable for vitrification. The process developed in France in 1978 is available for industrial use. After cooling, these pellets can be buried in salt mines or granite rock for-

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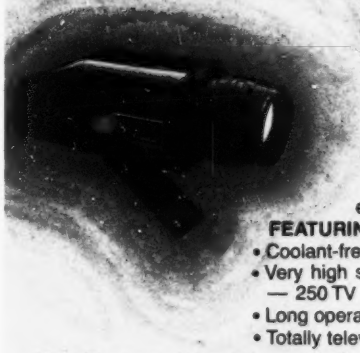

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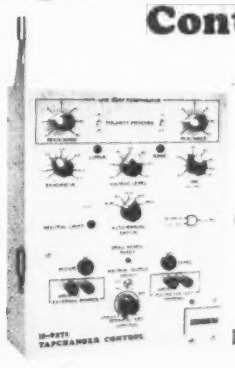

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books

FEDERAL ENERGY INFORMATION SOURCES AND DATA BASES, *by Carolyn C. Bloch, Noyes Data Corp., Mill Rd. at Grand Avenue, Park Ridge, N.J. 07656, 1979, 116 pp., $24.*

This book is an important resource for energy agencies, libraries and information centers. Its stated purpose is to "make it easier to identify, acquire and compile up-to-date federal energy data constantly needed in the scientific and technical community."

The planned scope of the book was to "cover all agencies that deal in some capacity with energy problems," but at least one glaring error is the omission of the Tennessee Valley Authority, which has an excellent energy library system. Too, the data is about two years old—phone numbers do change and the Department of Energy is also changing. Still, the book will serve as a time-saving reference for energy research. Capsule descriptions of libraries and information centers are especially helpful. With information on sources, services, data bases and in many cases free publications, this handy book belongs in the ready-reference section of a library or on a librarian's desk. EDE

ELECTRICAL CONSTRUCTION COST ESTIMATING, *by Harry T. Cubit, McGraw-Hill, 1221 Avenue of the Americas, New York, N.Y. 10020, 1981, 297 pp., $27.50.*

This sourcebook will be helpful in developing electrical estimates from the powerhouse to the ultimate load. It can be used in preparing competitive contracts, budgets and conceptual estimates. Inasmuch as about 6 percent of every electrical construction dollar is spent on cost estimating the book has the potential to repay its readers handsomely.

Topics discussed in detail include estimating utility substations and structures; line construction; concepts, raceway and support material; wire and cable material and accessories; motors, disconnects, starters and controls; devices, plates and dimmers; fire alarms and smoke detection systems; lighting fixtures and accessories; electric heating; and telephone and television systems.

THE UNITED STATES ENERGY ATLAS, *by David J. Cuff and William J. Young, The Free Press, 866 Third Ave., New York, N.Y. 10022, 1980, 416 pp., $75.*

Here we have 200 maps, 150 graphs and figures, 50 diagrams, dozens of pictures, and readable text regarding U.S. energy resources, along with a glossary, suggested readings, references, source notes and index. Part one (nonrenewable resources) includes chapters on coal, crude oil and natural gas, oil shales and tar sands, nuclear fuels and geothermal heat. Part two (renewable resources) deals with solar radiation, wind power, hydroelectric power, ocean thermal gradients and biomass.

ENERGY CONSERVATION IDEA BOOK, *prepared at the Academy for Educational Development (1414 22nd St. NW, Washington D.C. 20037), 1980, 171 pp., $12 (softcover).*

This handbook is designed to bring to public attention examples of nearly 500 innovative energy conservation ideas and practices that colleges and universities actually put into operation during the past few years. It tells how, why, when and where they were accomplished. Examples range from very small, relatively unknown schools to the Harvard Business School.

It is both interesting and helpful to have all these efforts described in an organized, single volume. The approaches and examples are sketchy, but will serve as an impetus to similar institutions. The handbook includes topical and geographical indexes, along with the names, addresses and phone numbers of principal persons involved at participating institutions.

An appealing innovative approach was undertaken at Northland College in Ashland, Wis.: "The college reduced its overall energy consumption by offering a free party to the students in the dormitory having the lowest energy use." To paraphrase the introduction to the book, a great deal can be learned about energy conservation by studying successful examples. EDE

WEATHER DATA HANDBOOK FOR HVAC AND COOLING EQUIPMENT DESIGN, by Ecodyne Corp.; McGraw-Hill, 1221 Avenue of the Americas, New York, N.Y. 10036, 1980, 229 pp., $32.50.

The authors of this reference guide describe it as a "one-of-a-kind handbook—essential for accurate design calculations and solar and wind energy installations."

The handbook is organized into 13 parts outlining weather data for design engineers and architects responsible for the siting, design and specifications for various types of buildings and installations. Charts of national dry bulb/wet bulb temperatures, tabulations of monthly temperature frequencies and other weather parameters are presented in a straightforward, helpful manner.

Although the handbook appears comprehensive, some of the data are based on readings in the '50s rather than more recent decades. STS

REGULATED INDUSTRIES AND PUBLIC ENTERPRISE, edited by Bridger M. Mitchell and Paul R. Kleindorfer, D.C. Heath & Co., 125 Spring St., Lexington, Mass. 02173, 1980, 291 pp., $29.95.

This book consists of 13 papers by economists—most of them academics—presented at a 1979 international symposium in Brussels on public policy for regulated monopolies and public enterprise. They deal with monopolies in such areas as electricity, communications, transportation and postal services, and problems in regulating these monopolies, whether private or public.

Several of the papers are packed with formulae and the jargon of the economist, and clearly not intended for the casual lay reader. For persons interested in electric power there are several useful chapters.

Of special interest is a paper on time-of-day rates for residential customers, based on the 1979 Los Angeles (Cal.) Department of Water and Power electricity rate study. The authors (Jan Acton and Bridger Mitchell) conclude, in part, that peak-load rates are of benefit only if selectively applied to households that use large amounts of electricity.

There are also papers on:

- Cogeneration, by a British researcher, who concludes that electric utilities should be required to work with cogenerators on a basis "which would allow all the gains to go to the cogenerator"—a policy approach not viewed favorably by many APPA member utilities; and
- Proposals, in West Germany, to promote competition by allowing franchise bidding for the rights to supply bulk power to regional and local service areas. The author, a West German professor, concludes that franchise bidding is not an efficient alternative to regional power monopoly. JDB

WHY FRANCE WENT NUCLEAR

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mations. Identification of suitable sites of this kind is in hand, but is not an urgent matter in view of the small amounts thus far involved.

The nuclear program is not the whole of EdF. Of a total of 232 billion kwh produced by the corporation in 1980, conventional thermal power stations accounted for 90 billion kwh and hydroelectric plants for 64 billion kwh.

Of course in 1980 the main emphasis was on developing nuclear capacity, with the inauguration of seven 900-mw PWR plants. But since 1975 EdF has been reconverting thermal power stations from oil to coal, involving some 4,000 mw at 15 or so units. Furthermore, three new coal-fired thermal power stations, rated at 600 mw each, are under construction, together with 26 hydro plants totalling 3,800 mw.

The current program of Electricité de France is a human, as well as technological, challenge. No effort has been spared to reduce construction times and costs, ensure maximum safety and reliability of plants, preserve the environment, merge construction site operations with the existing social context in their areas, and enhance the capability of all French contracting firms concerned.

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SEPTEMBER / OCTOBER 1981

public power

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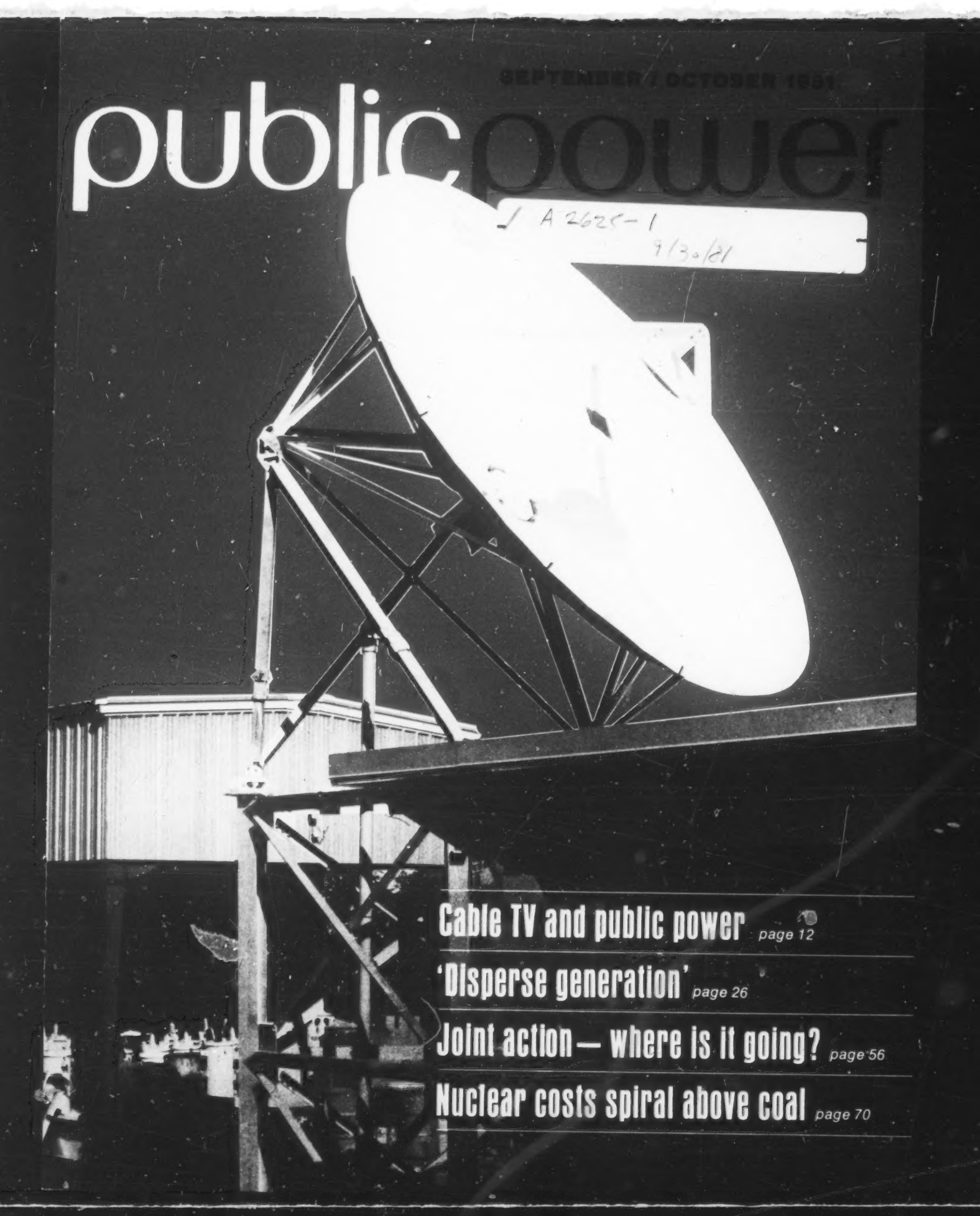

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FRONT COVER: Electric transformers and the cable TV receiving "dish" next to each other in Conway, Ark., symbolize the marriage between the two technologies. The cover article on consumer-owned cable TV begins on page 12.
—Photo by Vic Reinemer

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Cable TV and public power belong together

by VIC REINEMER *editor, PUBLIC POWER*

FROM SHREWSBURY, MASS., to Davis, Cal.—in cities as large as St. Paul, Minn., and as small as Primghar, Iowa—consumers are moving toward local ownership and control of cable television.

You can't call it a trend—at least not yet. Typically, cable TV franchises are awarded to large corporations. The bid and award system is often characterized by "rent-a-citizen" techniques—prominent local people are hired or given potentially lucrative stock in return for lobbying help. Rosy promises made in the competition to win favor of local officials and obtain the franchise are not always kept.

The number of U.S. cable TV systems almost doubled from 1970 to 1981. Some 4,200 systems in more than 10,000 communities reach one-fourth of the nation's homes. In a decade the number of subscribers has more than tripled to almost 21 million.

About half of these cable TV systems have from 500 to 5,000 customers; only 14 have more than 50,000 subscribers. Two-thirds of the systems carry from six to 12 channels, according to the National Cable Television Association. Many of them grew out of early community antenna hookups in regions too remote from stations to obtain a signal.

When PUBLIC POWER looked at cable TV almost 10 years ago(*) there were 18 known municipally owned cable TV systems, nine in towns with local publicly owned electric systems. Our current count (see p. 14) which may have missed some, lists 33, including 21 in communities served by public power.

Major league baseball may have gone to pot this year but there's a whole new ball game in cable TV. Satellite transmission and other new technologies have attracted large corporations and a panoply of investors, advertisers, and publicists into cable. The potential for profit is vast. So is the potential for community service—especially in cities and towns served by public power.

Conway, Ark., System New

The newest municipal cable TV system, which began operation last fall, is in Conway, Ark., a college town of some 20,000 population 32 miles north of

(*) "A Marriage Proposal: Cable Television and Local Public Power," two articles by Louis Schwartz and Robert A. Woods and one by Jim Webster, November-December 1971 and January-February 1972 issues of PUBLIC POWER.

Little Rock on Interstate 40. Conway's experience suggests that locally owned cable TV has the same advantages public power has regarding rates, service and local control. Furthermore, Conway officials believe locally owned cable TV is especially suited to communities which operate their own electric power systems.

Conway citizens have provided themselves with electric power, water and sewer service for more than half a century, through the municipal Conway Corp. The city council governs the water and sewer system through the corporation, which has a separate board of directors for electricity and, now, cable.

The Conway Corp.'s board consists of five persons serving five-year staggered terms. The board elects its new members, subject to city council ratification. Policy for years has been to bring aboard a new member each year. The city council has never failed to approve a Conway Corp. board nominee, which says something about the thorough and cautious political work of the Conway Corp. and its general manager, James H. Brewer. He has managed the municipal corporation since 1965, following 10 years as assistant manager for electricity.

"Our cable TV evolved from a community antenna system," Brewer said in a May interview. "Fifteen years ago the city of Conway held back the cable franchise. I knew we had a pretty good chance of becoming a viable cable utility someday. The electronic people had shown us the opportunities—smoke sensors, break-in surveillance, other services. When cable became viable for us, after Federal Communications Commission regulations changed in 1979, we asked council members to look at it, and by then they were accustomed to the idea of locally owned cable."

The Conway, Ark., cable TV earth station ("dish") is mounted between an electric transformer storage shed and the city water tower, adjacent to the Conway Corp. office. General Manager James H. Brewer emphasizes that common use of facilities and personnel by the city's various utilities saves money for ratepapers. Photo by Vic Reinemer

Service Emphasized

Conway has broadened the already expanding concept of energy services delivery by public power systems. The Conway Corp. believes strongly in delivery of various services desired by the community, not only energy, water and sanitation, and at prices all segments of the constituency can afford. Attractive bulk rates are provided for cable TV subscriptions at senior citizen homes, the two colleges and one university, foster parent homes and motels.

"There's an advantage in having a service—rather than proprietary—orientation," said Brewer. "If cable is service-oriented you don't get sold a lot of add-ons.

"We plan to provide fire and burglar alarms for an extra 30 cents per customer. Ultimately we plan other services such as banking. If the medical community here so decides it can avail itself of X-rays and use of CAT-scan (an expensive diagnostic machine which takes three-dimensional pictures of the interior of the body) over our community cable."

Electric Experience Valuable

Brewer believes the community's experience in running its own electric system gave it a leg up on providing cable TV.

"The inherent characteristics of municipal electricity are relevant to cable," he said. "There's a world of technical expertise here. We knew we had the in-house capability."

He sees cable as a means of obtaining better load control for Conway's public power system. "We're already using radio, and getting much stronger load control with industrial and commercial customers. Cable provides a more positive vehicle for signaling load management devices and therefore their operating time frames can be

more closely coordinated with peak load periods. Furthermore, with cable the load control programs can be more sophisticated and complex."

Brewer said ownership of rights-of-way and electric utility poles is certainly an advantage to public power systems going into cable. But the big "plus," he emphasized, is ownership of aerial-type equipment and people with operational expertise.

"The same equipment and expertise advantage applies to underground as well as overhead construction, and much of our cable system is underground."

"We'll use cable for meter reading," Brewer said. "We don't have two-way capability yet but will have it."

Conway's monthly rate for 16 basic channels is $7.50. Two additional entertainment channels, "Showtime" and "The Movie Channel," are available at $8 each or $15 for both.

Installation charges are $25 for the first outlet and $12.50 for each addition. Previously wired structures are connected for half price. Three rates are available for bulk customers; they vary according to who provides electronic equipment and who is responsible for maintenance and replacement. Conway Corp. found that some bulk customers, such as college dormitories and smaller motels, wanted only basic service, without the extra entertainment channels.

One remunerative surprise was the number of households which pay an extra $4 per month for additional cable outlets.

"We have one fellow with seven TV sets," said Brewer.

Sign-Up Underestimated

When planning the system, Conway Corp. underestimated both the number of citizens who would sign up and the popularity of premium channels.

"We projected 3,000 customers, at an average $11.50 rate," said Brewer. "We'll reach 4,000 customers—we are still attaching every day—and revenues are averaging $15.50. We have 6,700 residential electric meters. So we projected about a 50 percent sign-up and will reach more than 60 percent."

Conway's cable TV was financed with a $1.5 million surplus in the electric department. Carrying a 7 percent interest charge, the money will be paid back over 25 years. Payback has already started. The electric department loaned an additional $200,000, which is being paid back over three years, to cover a shortfall.

Anticipated gross cable revenue for the first year of operation is $450,000. Three percent of gross revenues will be returned to the city for the franchise payment, and 10 percent of gross revenues less debt service will go to the city as lease payment. (The city owns the system and leases it to Conway Corp.; the lease payment can be compared with a dividend in a private firm.

"We are anticipating returning to the city approximately $45,000 plus ap-

DIRECTORY OF MUNICIPALLY

PUBLICLY OWNED CABLE TV systems in cities or towns served by local publicly owned electric utilities are shown in boldface. The name listed is the manager or another person familiar with the cable TV system. When two numbers are listed under "Channels" the first is the number in use and the

Name/Address	*Manager/Phone*	*Year Started*	*Subscribers*	*Channels*	*Basic Monthly Rate*
Opp Cablevision Box 311 Opp, Ala. 36467	Charles McGowan 205/493-4571	1967	2,200	10	$6.00
Conway Corp. Box 99 Conway, Ark. 72032	James H. Brewer 501/329-5641	1980	4,000	18	7.50
San Bruno Municipal Cable TV 567 El Camino Real San Bruno, Cal. 94066	David A. Thomas 415/877-8889	1971	8,000	22-26	7.25
Copper Mountain Metropolitan District Cable TV Box 3195, Copper Mountain, Colo. 80443	Doug Allen 303/668-2882	1977	484	6	10.00
City of Newberry City Hall Newberry, Fla. 32669	John W. Caldwell 904/472-2161	1974	550	8	6.00
Valparaiso Communications System Box 296, 44 Southview Ave. Valparaiso, Fla. 32580	Thomas Miller 904/678-2922	1976	1,217	20	6.00
City of Covington CATV Covington, Ga. 30209	Frank Turner 404/786-5324	1980	700	17-35	6.00
City of Monroe Box 725 Monroe, Ga. 30655	John T. Briscoe Jr. 404/267-5756	1972	2,650	17-21	4.00
City of Madison Box 87, Madison, Ill. 62060	Mike Macek 618/876-6268	1982 Est.	1,000 Est.	—	—
City of Primghar 741 16th St. Primghar, Iowa 51245	Robert Mulder 712/757-2435	1981 Est.	—	19-30	8.50
City of Sanborn Sanborn, Iowa 51248	Allen Bonderman 712/729-3974	1981 Est.	—	19-30	8.50
City of Americus Americus, Kan. 66835	Mayor Don Stone 316/884-5655	1976	204	7	12.00
City of Baxter Springs Baxter Springs, Kan. 66713	Don Henry 316/856-3600	1980	1,000	11	8.00
City of Cawker City Box 2, Cawker City, Kan. 07430	Delbert Wallace 913/781-4713	1977	220	6	8.00
City of Columbus 300 E. Maple Columbus, Kan. 66725	Gail Houser 316/429-2159	1980	517	11	8.00
City of Marion Marion, Kan. 66801	Joan Bowers 316/382-3702	1978	400	12	9.50
City of Waverly Box 452, Waverly, Kan. 66871	Diane Phillips 913/733-2461	1977	310	9	12.50

OWNED CABLE TV SYSTEMS

second the number available.

This list was compiled by PUBLIC POWER by telephone in July 1981. Additions or corrections from readers will be appreciated. Send changes to editor, PUBLIC POWER, 2600 Virginia Ave. NW, Washington D.C. 20037.

Name/Address	Manager/Phone	Year Started	Subscribers	Channels	Basic Monthly Rate
Community Service, Inc. 325 Ann St. Frankfort, Ky. 40601	Ben Fowler 502/223-3477	1952	7,410	12	3.50
City of Crystal Falls 401 Superior Ave. Crystal Falls, Mich. 49920	Walter E. Hagglund 906/875-6650	1959	800	8-21	4.50
Iron River Cooperative TV Antenna Corp. Iron River, Mich. 49935	Jerry Ward 906/265-3810	1957	1,000	12	4.00
City of Norway CATV Box 194, Norway, Mich. 49870	Junior Stanchina 906/563-9641	1954	1,400	9	3.75
Wyandotte Municipal Service Commission 140 Elm St., Wyandotte Mich. 48192	Dale Simmons 313/282-7100	1982 Est.	—	—	—
Bagley City Cable TV Box M, Bagley, Minn. 56621	Bernie Stavig 218/694-2300	1976	520	9	7.65
City of Fosston Cable TV Foston, Minn. 56542	Russell Earls 218/435-1737	1976	550	10	5.75
Jackson Municipal TV System 504 2nd St., Jackson, Minn. 56143	Kevin Murray 506/847-3225	1957	1,200	10-12	5.00
Newburg Cable TV System Newburg, Mo. 65550	Barbara MacCormic 314/762-2315	1969	260	6	5.00
Unionville Cable Authority 1611 Grant St., Box 255, Unionville, Mo. 63565	Dennie Sheehan 816/947-2168	1980	730	13	8.00
Cascade Locks CATV Box 308, Cascade Locks, Ore. 97014	Ken Hobson 503/374-8484	1972	366	10-23	6.75
Town of Lexington Lexington, Ore. 97839	Mayor Ed Baker 503/989-8116	1959	100	8	$5.00
New Wilmington Borough Cable TV 140 West Neshannock Ave., New Wilmington, Pa. 16142	Ed Garrett 412/946-8167	1979	300	12	6.00
Pitcairn Community Antenna System 582 - 6th St. Pitcairn, Pa. 15140	George Myers 412/372-6500	1953	1,000	10	3.00
Rouseville Television Club Rouseville, Pa. 16344	Charles Licht 814/676-2171	1957	275	8	3.00
City of Sumas TV Cable System Box 5, Cherry St. Sumas, Wash. 98295	Lawrence Silvis 206/988-5711	1953	250	7	4.50

plying $129,000 to liquidation of capital debt service in the first year of operation," said Brewer. "Obviously upon retirement of indebtedness the system will produce a substantial benefit to the city and still retain a significant portion of cash flow for further capitalization of the cable system."

Installation Simple

Conway Corp. brings cable from its utility poles to a grounding block installed within two feet of the electric meter on the outside of a subscriber's house. A ground wire from the block protects the electric meter from lightning damage. Another wire carries the signal to the television. Conway Corp. staples this wire around the outside of the house, as unobtrusively as possible, and drills and caulks a hole in the wall where the wire enters the room(s) with TV.

Subscribers who would rather have the wiring run through their attic or under their floor have to do that themselves or hire an electrician. Conway Corp. will provide the wire and test the wiring before hooking up the cable, but will not be responsible for faulty wiring unless done by its employees.

No First Amendment Problem

Nationally, one of the arguments used by private cable TV firms to discourage cities and towns from themselves entering the potentially lucrative cable TV business is that municipal control of a cable system violates the First Amendment; the government is dictating what people see and hear. That argument doesn't play in Conway.

"We've had a philosophical discussion or two about it but no problem," said Brewer. "Sixteen fellow citizens are making the decisions. Somebody has to choose."

(See editorial column on cable TV and public power on page 104.)

The 16-member program committee, established by city ordinance, includes the mayor, who serves as chairman, three persons named by the presidents of the local colleges and university, one member selected by the Conway Ministerial Alliance, another by the school board, eight citizens appointed by the eight aldermen, the chairman of the city council's utility committee and the manager of the Conway Corp. or his designee.

Elected officials serve during their term of office; the terms of aldermen and their appointees coincide. The manager of the Conway Corp. serves as long as he holds his job. The five other board positions are five-year terms, staggered so one will expire each year.

Basic channels selected by the committee include three from Little Rock (the three major networks); independent stations in Atlanta (WTBS), Chicago (WGN) and New York (WOR); CNN Cable News Network; U.S.A. Network; ESPN Sports Network; Children's Programming, CBN Christian Broadcast-

continued on page 17

ing, CMN Christian Media, the weather channel and KETS Conway educational TV.

University Handles Public Access

One channel is assigned to the University of Central Arkansas in Conway. (The state educational TV organization is headquartered there.) The fine arts and continuing education departments handle programming—including public access—on this channel; its main thrust is continuing education. The Conway Corp. will run the public access channel which is now being used for program display.

Both Brewer and Conway Corp. President Frank Robbins III, editor and publisher of the local daily LOG CABIN DEMOCRAT, say the municipal corporation's tradition of local involvement gave them and the community confidence they could build and operate cable TV.

Brewer estimates he has received calls from about 30 communities, across the country, that are interested in locally owned cable TV. He smiles when he contrasts the cable TV situation in Conway and Little Rock:

"We've watched Little Rock and seen the fragmentation and lawsuits over who gets a franchise. They end up with a company that has sold them the moon. There are people doing business in Little Rock staying in Conway right now because of our cable TV."

Upgrading Old Systems

Some of the early municipally owned cable TV systems are upgrading their facilities. One of them is Crystal Falls, in Michigan's Upper Peninsula, which began operation in 1959. It had eight channels but after upgrading and installing a $15,000 earth station (receiving "dish") this summer has a capability to receive 21. The dish will save $500 a month for the system which, with 800 subscribers, has an 85 percent penetration in the community.

"We'll get our money back from the earth station in two and a half years," said City Manager Walter E. Hagglund. "And we won't have to raise our rates from $4.50 a month.

"This town provides its own electricity, sewer, water, hospital, cemetary, park, lakesite and golf course—all but gas," he said. "And we're the only one in the county that isn't up to charter limitation on its tax rate."

The city council of Wyandotte, Mich. (pop. 38,000), voted in April for a municipally owned cable TV system, despite strong representations by investor-owned cable companies. The decision followed an 18-month study which forecast cable revenues for the city of $3.4 million over a 15-year period—$2.2 million more than from private firms.

If problems relating to charter clarification and division of revenue are solved on schedule, construction of the cable system—expected to take one year—will start this fall. Construction costs of $1.7 million will be funded through a lease arrangement with a private firm which will own the system initially. The city will build equity as it pays the initial owner and have an option to buy the system outright.

The Wyandotte Municipal Service Commission which provides electric power and water will be in charge of the cable system. General Manager Dale O. Simmons said the city plans to use cable for electric meter reading and, eventually, load management.

"There are so many things a cable system is able to do," said Simmons. "I feel very strongly that too many cities have gone into it too fast. Once you grant a franchise you've allowed a utility to come into your city and for all practical purposes you're stuck with them for life."

General Manager Brewer eyes instruments at the Conway cable TV "head end," where TV signals are processed and prepared for distribution. Construction of the municipal cable TV system was financed by a $1.7 million loan from the electric department. Payback has already started. The city also receives franchise and lease payments from the public cable TV system.

"There are so many things a cable system is able to do," said Wyandotte (Mich.) Municipal Service Commission General Manager Dale O. Simmons. "I feel very strongly that too many cities have gone into it too fast." Wyandotte plans to use cable TV for meter reading and load management. Photo by Nancy Wenzel, WYANDOTTE (MICH.) NEWS-HERALD

Joint Action Helped Iowa Towns

Two public power towns in northwest Iowa—Sanborn and Primghar—are already applying joint action to cable TV. Located about seven miles apart, they will save $50,000 to $60,000 by sharing the "head end" (the facility which receives and processes the TV signals and prepares them for distribution), transmission facilities and maintenance personnel.

"Wes Birdsall (general manager of Osage, Iowa, Municipal Light & Power) got us interested in load man-

agement possibilities of cable last year," said Sanborn Superintendent Allen Bonderman," even though his system hasn't gone into cable yet. We looked at the nonprofit municipal cable setup in Unionville, Mo., and are using a similar organization in Sanborn. Primghar will own its share of the system and so will we after we pay off the nonprofit corporation.

"Feasibility looked good but our problem was finance. We needed $300,000. Primghar is raising its share by general obligation bonds and Sanborn is using revenue bonds. Our local bank is backing us."

In April 90 percent of the voters in Sanborn and 87 percent in Primghar backed public cable TV. The system is scheduled to be on the air Dec. 1. Subscribers will pay $8.50 monthly for 19 basic channels. (The system will have a 30-channel capacity.)

Town officials project a 55 percent sign-up and seven-year repayment of debt. Bonderman said they hope to be using the system for electric load management next year.

Franchise Value Enormous

Popular support for municipally owned cable TV—and a half-million dollar bond issue to finance it—was also demonstrated by a two-to-one majority in a survey conducted by the Shrewsbury, Mass., Board of Selectmen last fall. In the same survey townspeople voted three to one (1,672 to 514) against licensing a private company to construct and operate the cable system.

"The CATV franchise has a value of $1,000 to $1,200 per subscriber, and once given away it cannot as a practical matter be recovered."

Shrewsbury's Electric Light Plant submitted its application for the franchise in June. An advisory committee is scheduled to make a recommendation to the board this fall from among proposals of the municipal and three investor-owned applicants.

The Shrewsbury system's manager, APPA President-elect James E. Baker, told the board of "three prominent advantages" to be derived from municipal ownership and operation of the cable TV system: local control, lower costs and franchise value:

"The CATV franchise has a value of $1,000 to $1,200 per subscriber, and once given away it cannot as a practical matter be recovered. Substantial economic advantage can be gained through joint use of facilities and personnel by the cable and electric operations.

"Policies and subscriber rates should be determined locally rather than in a boardroom in New York or Chicago," said Baker. "A great many services capable of being furnished by the cable system will be used by municipal departments as well as local subscribers and it should be a matter of local determination when these services will be made available."

"We'll get our money back from the earth station in two and a half years."

Baker believes that the full potential of cable TV for community service would not be realized through private development. "The potential for cable, especially in conjunction with computers, is enormous," he said.

Big Cities Interested

Larger cities without public power are also considering local ownership and control of cable TV, through either public or cooperative ownership. The St. Paul, Minn., Cable Cooperative culminated a lively educational and organizational campaign in January by presenting the city council petitions from 5,000 citizens and dozens of witnesses favoring a cable cooperative.

The council undertook a study and in May rejected franchise applications from seven companies and voted to establish a tax-exempt nonprofit organization to build and run the cable system. St. Paul plans an 80- to 90-channel system financed by sale of $41 million in Port Authority industrial bonds yielding about 11 percent interest. The nonprofit organization, according to Joanne Showalter, head of the city council subcommittee studying cable, will free the cable managers from political pressure to censor programs.

St. Paul's twin city, Minneapolis, is studying municipal ownership of cable. So is St. Louis, Mo., with special emphasis on a nonprofit cable organization. Paterson, N.J., is building a system which it will lease out, except for six channels reserved for the city.

"St. Paul plans an 80- to 90-channel system financed by sale of $41 million in port authority industrial bonds yielding about 11 percent interest."

In Washington D.C. a cable television task force recommended in March creation of a semipublic cable TV corporation which would go to the private marketplace to finance construction. The corporation would determine how many channels would be devoted to public service and how to award access to channels.

State Law May Be Limiting

Across the Potomac from Washington in suburban (pop. 597,000) Fairfax County, Va., cable TV became a red-hot potato last year. News accounts described fee and stock arrangements between firms seeking a franchise and influential local citizens.

The board of supervisors bucked the issue to its Consumer Protection Commission. After studying ownership options (and other aspects of cable TV) the commission found investor ownership the most viable "in view of legal and practical problems associated with public ownership and financial and operational problems related to cooperative ownership possibilities."

Virginia law permits municipal cable systems only in communities otherwise unable to receive a satisfactory TV signal. Amendment of the law to authorize public ownership in Fairfax County was considered unlikely, given the state legislature's antipathy toward home rule in general and in northern Virginia in particular.

The Fairfax County experience underscores the importance of close attention to state statutes by any commu-

nity considering municipally owned cable TV. Cable is seldom mentioned in statutes regarding grants of powers by the state. Legal interpretations or amendment of state laws may be necessary. Additionally, municipal bonds may be sold only for specific purposes in some states; legislation to include cable bonds may be required.

New Co-op System in Wisconsin

The argument of investor-owned firms that local institutions cannot successfully own and operate a modern, sizable cable TV system obviously has not impressed a number of municipalities—and cooperatives as well. A cable co-op has served Trempealeau County in west central Wisconsin since 1979. The Western Wisconsin Communications Cooperative (WWCC) headquartered in Independence has 36-channel capacity, with 18 channels already in use.

Eight of them provide two-way service for the county's eight rural school districts. This means students around the county can participate—without leaving their home school—in classes being held at any other school in the county.

The school channel also has access to the county channel, for which senior citizens of Trempealeau County provide two and one-half hours of local programming each week day. Their programs—both live and taped—often feature local history, trades, industry and music.

"We have 2,700 subscribers and are growing every day," said Bill Urban, WWCC secretary and Blair School District superintendent. "We've already laid 137 miles of hard cable. Our county has a population of about 23,000 and is 62 miles by 26 miles. Our long-range goal is to make cable available to every home in the county. We also provide some service outside Trempealeau."

With density averaging only eight persons per square mile, costs had to be kept to a minimum. Broad community support helped.

"Twenty-eight local co-ops helped with seed money," said Urban. "Each school district put up $1,000. We sold $100 preferred equity certificates which won't bring a return for some time.

"We've sold a lot of $5 membership, especially to older folks who came up and said, 'I remember when rural electrification came and people said it wouldn't work. But it did, and so can co-op cable. Here's $5 for my son and $5 for my grandson.'"

Principal financing came from the Farmers Home Administration, which loaned $1,256,000 at five percent interest for 15 years, plus $60,000 for an earth station. Urban stressed the importance of a $510,000 grant from the W. K. Kellogg Foundation which helped get the school programs going and nearby universities involved.

The basic rate in Trempealeau County including the ESPN (sports) channel is $8.75 a month. Two movie channels require extra payment.

Twenty-eight various cooperatives helped establish the Western Wisconsin Communications Cooperative in Trempealeau County, Wis., providing both labor and seed money.

"I remember when rural electrification came and people said it wouldn't work. But it did, and so can co-op cable. Here's $5 for my son and $5 for my grandson."

Community Potential Vast

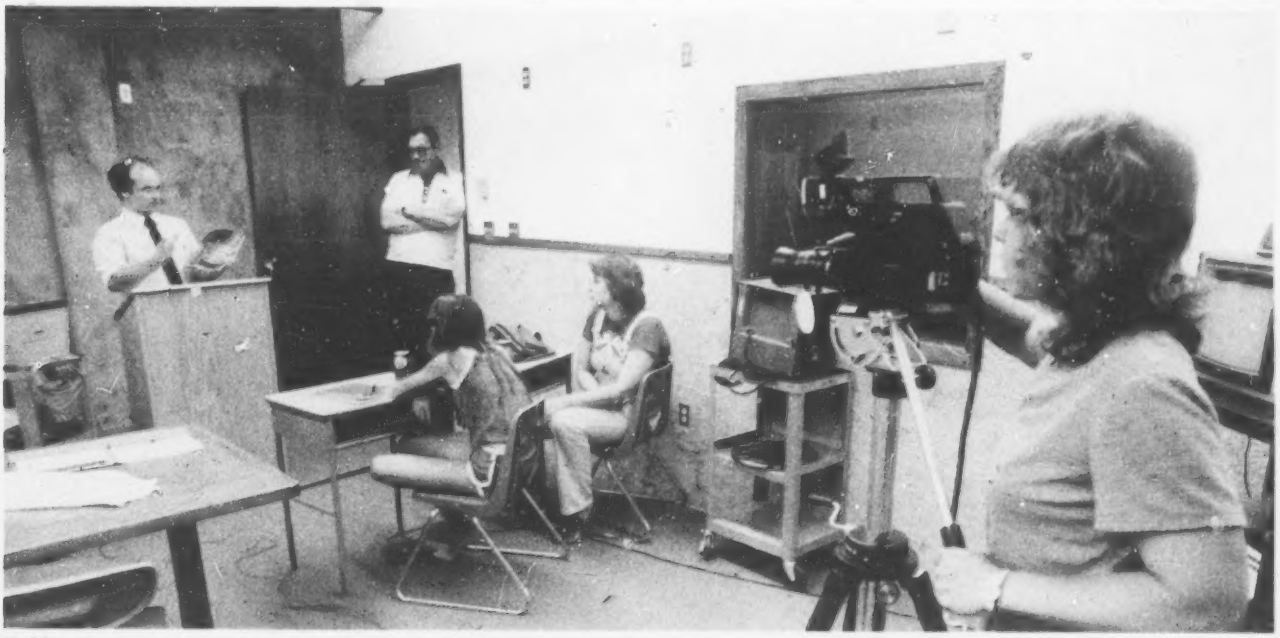
Unlike Trempealeau County, most co-op cable systems are small community antenna operations. The cooperative communications project of the National Citizens Committee for Broad-

casting (NCCB)—which has provided assistance to many co-op groups—counted 76 such systems. However, a modern, state-of-the art cable co-op is a possibility in Davis, Cal., where the city council has awarded the cable franchise to a subscriber cooperative pending completion of a feasibility study by the National Consumer Cooperative Bank. Other communities considering co-op cable TV include Boulder, Colo.; Milwaukee, Wis.; and Oberlin, Ohio.

"Cable TV will to a large extent be a monopoly," said Bruce Jacobs, director of the NCCB's cooperative communications project. "Cable TV is potentially too great a community resource to be left to commercial interests. Development will depend on both technology and a commitment to public service. The technology is wonderful, but alone it is not enough. There must also be that interest in using it for the common good."

Consumer Cable TV Workshop?

APPA is considering sponsorship of a workshop on establishment and operation of consumer-owned cable television systems. If you are interested in participating please write or call Jeff Tarbert, American Public Power Association, 2600 Virginia Ave. NW, Washington, D.C. 20037 (202/342-7200).



Debbie Sveen, creative writing instructor in the Trempealeau County, Wis., summer school session, puts visiting journalist Robert Gibson of RURAL ELECTRIFICATION *magazine on camera. Students watching at other county schools questioned Gibson over the two-way cable TV. Standing in the doorway is Bill Urban, Blair School District superintendent and secretary of the cable co-op.* Photo by Rod Moen

(The University of Wisconsin Center for Research and Educational Improvement is sponsoring a conference Sept. 28-30 in Eau Claire, Wis. regarding cable TV and educational development in rural communities. Details are available from the center's director, Ray Szymanski, 715/232-1393.)

for further action

Resources for persons and communities interested in locally owned cable TV systems include, in addition to APPA and persons named in the preceding article and directory:

Cooperative League of the United States of America (CLUSA), 1828 L St. N.W., Suite 1100, Washington, D.C. 20036, Carol James, 202/872-0550;

National Citizens Committee for Broadcasting, Box 12038, Washington, D.C. 20005, Bruce Jacobs or Sam Simon, 202/466-2520;

National Federation of Local Cable Programmers, 4601 S. 31st Rd., Apt. A 1, Arlington, Va. 22206, Sue Buske, 703/820-8890;

National League of Cities, 1301 Pennsylvania Ave. N.W., Washington, D.C. 20004, Susan McAdams, 202/626-3115;

National Rural Electric Cooperative Association, 1800 Massachusetts Ave. N.W., Washington, D.C. 20036, Tom Hoy, 202/857-9500

National Telephone Cooperative Association, 2626 Pennsylvania Ave. N.W., Washington, D.C. 20037, Bob Leigh, Amy Gross, David Cosson, 202/342-8200;

St. Paul Cable Cooperative, 411 Main St., St. Paul, Minn. 55102, Neal Gosman, 612/227-1253.

energy plight compels ingenuity in Israel

by DAVID J. BARDIN

Editor's Note: This is the second of occasional articles PUBLIC POWER has asked several authors to prepare regarding energy in foreign countries.

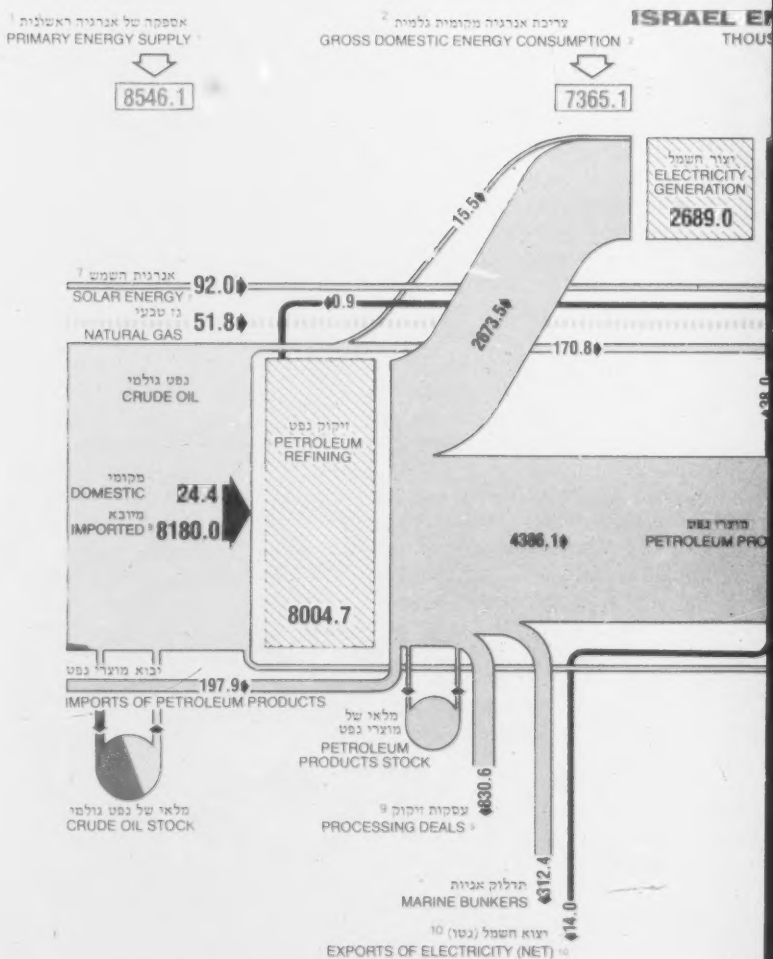
ALMOST FOUR MILLION ISRAELIS live in the heart of the world's foremost oil exporting region. Yet Israel faces one of the world's worst energy problems, depending almost entirely on a precarious supply of oil imports.

Israel's energy problems have a unique military dimension. A continuing state of war with the Arab petroleum exporting countries that supply most of the world's oil trade has produced an ongoing embargo. Moreover, attempted blockades to cut off oil supply lines from other exporters have led Israel to fight two wars to keep oil supply lines open.

Only for a few years, between the Six-Day War of 1967 and the Camp David agreements, did Israel enjoy the luxury of producing its own fuel requirements, from oil fields in the western Sinai Peninsula and Gulf of Suez. Israel has transferred those oil fields to Egypt pursuant to the highly prized peace treaty. Once again, Israel imports virtually all of its fuel.

Dependent on Imports

Even though Israel consumes only a quarter as much total energy per person as we do, Israel's oil imports cost half again as much per capita as ours do. Israel is much more oil-dependent than the United States is, using petroleum for almost all of its primary fuel needs, including electric generation.



(We Americans use petroleum for less than half our total energy needs, and less than an eighth of the electric generation needs.)

Israel also is much more import-dependent than the United States is, importing more than 95 percent of its primary fuels, as compared to U.S. fuel imports of 20 percent. Exploratory effort has yet to reveal large oil or gas deposits in Israel.

As oil prices multiplied, import dependence--exacerbated by restricted access to world oil markets—has severely strained Israel's balance of payments. Last year, oil import costs accounted for more than half the total trade deficit.

Through technological flexibility and business ingenuity Israel has overcome unusual obstacles. In these circumstances, Israel has good reasons to stress strategic stockpiles of petroleum, use solar energy and conservation today, diversify to coal tomorrow, and evaluate options for hydro, nuclear, oil shale, peat and other alternatives.

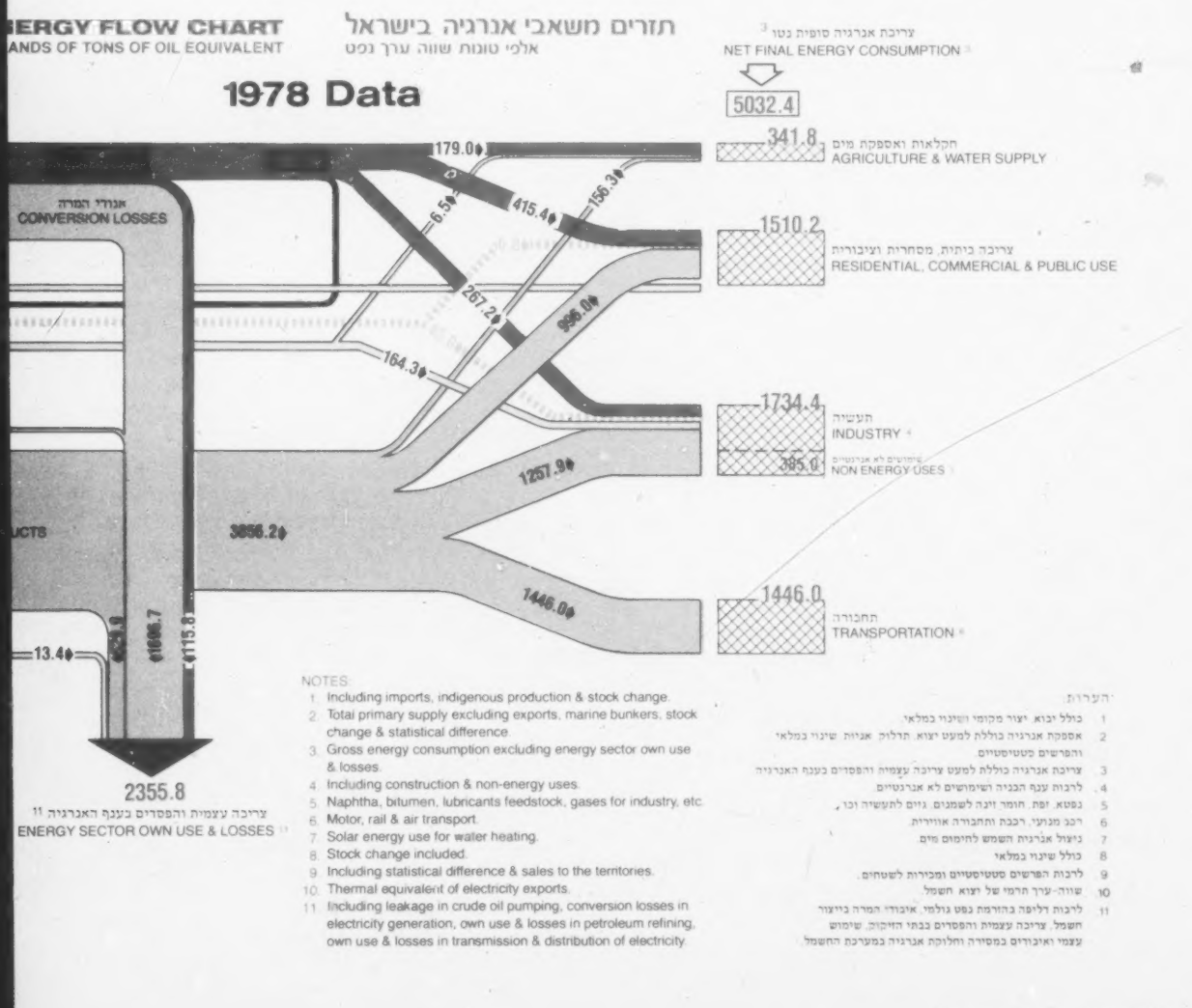
Bardin is counsel to the Washington, D.C., law firm of Arent, Fox, Kintner, Plotkin & Kahn. He formerly served as deputy general counsel of the Federal Power Commission, special consultant to the attorney general of Israel, commissioner of the Department of Environmental Protection of New Jersey, deputy administrator of the Federal Energy Administration, and administrator of the Economic Regulatory Administration.

Legacies of Colonialism

The Israeli petroleum and electric utility industries grew out of British imperialism in the Near East between World Wars I and II. Britain integrated the oil economy of Iraq and the Palestine Mandate (originally covering the areas that have become Israel, Jordan, the West Bank and Gaza). A pipeline tied the Iraqi oil fields to Israel's Mediterranean coast at Haifa Bay.

At Haifa the British built a naval base, an oil export port and an industrial-refinery complex where three international oil companies exported petroleum to Europe and supplied local needs. The Palestine Electric Corp., now The Israel Electric Corp. (IEC), established steam-electric generating stations in Haifa and Tel Aviv and a hydroelectric plant on the Jordan River.

The breakup of the British Empire after World War II, with newly independent Arab countries fighting newly independent Israel, initially had only limited effects on the energy economy. Although Iraq cut off oil pipeline shipments to Haifa, the international oil companies stayed on and used their world-wide resources to satisfy local oil demands. Although fighting knocked out the Jordan River hydroelectric fa-


ERGY FLOW CHART
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צריכה עצמית והפסדים בענף האנרגיה
ENERGY SECTOR OWN USE & LOSSES
NOTES:
1. Including imports, indigenous production & stock change.
2. Total primary supply excluding exports, marine bunkers, stock change & statistical difference.
3. Gross energy consumption excluding energy sector own use & losses.
4. Including construction & non-energy uses.
5. Naphtha, bitumen, lubricants feedstock, gases for industry, etc.
6. Motor, rail & air transport.
7. Solar energy use for water heating.
8. Stock change included.
9. Including statistical difference & sales to the territories.
10. Thermal equivalent of electricity exports.
11. Including leakage in crude oil pumping, conversion losses in electricity generation, own use & losses in petroleum refining, own use & losses in transmission & distribution of electricity.
הערות:
1 כולל יבוא, יצור מקומי ושינוי במלאי
2 אספקת אנרגיה כוללת למעט יצוא, תדלוק, אניות, שינוי במלאי והפרשים סטטיסטיים
3 צריכת אנרגיה כוללת למעט צריכה עצמית והפסדים בענף האנרגיה
4 לרבות ענף הבניה ושימושים לא אנרגטיים
5 נפטא, זפת, חומר זיגה לשמנים, גזים לתעשיה וכו'
6 רכב מנועי, רכבת ותחבורה אווירית
7 ניצול אנרגית השמש לחימום מים
8 כולל שינוי במלאי
9 לרבות הפרשים סטטיסטיים ומכירות לשטחים
10 שווה-ערך תרמי של יצוא חשמל
11 לרבות דליפה בהזרמת נפט גולמי, אובדי המרה ביצור חשמל, צריכה עצמית והפסדים בבתי הזיקוק, שימוש עצמי ואיבודים במסירה וחלוקת אנרגיה במערכת החשמל

cilities, the fossil plants on the coast picked up the load. Over the years, however, demands of Israel's growing economy and effects of Arab political pressures on the international oil companies brought about extraordinary adjustments.

Evolution of Energy Structure

Immigration of holocaust survivors from Europe and Jewish refugees from Arab lands in Asia and Africa, housing construction and industrial development all swelled energy demands. Government regulatory policy held electric rates so low that investor-owned Israel Electric, although traded on the London and Tel Aviv Exchanges, could not raise new capital and borrowed from the Israeli government to finance all needed growth.

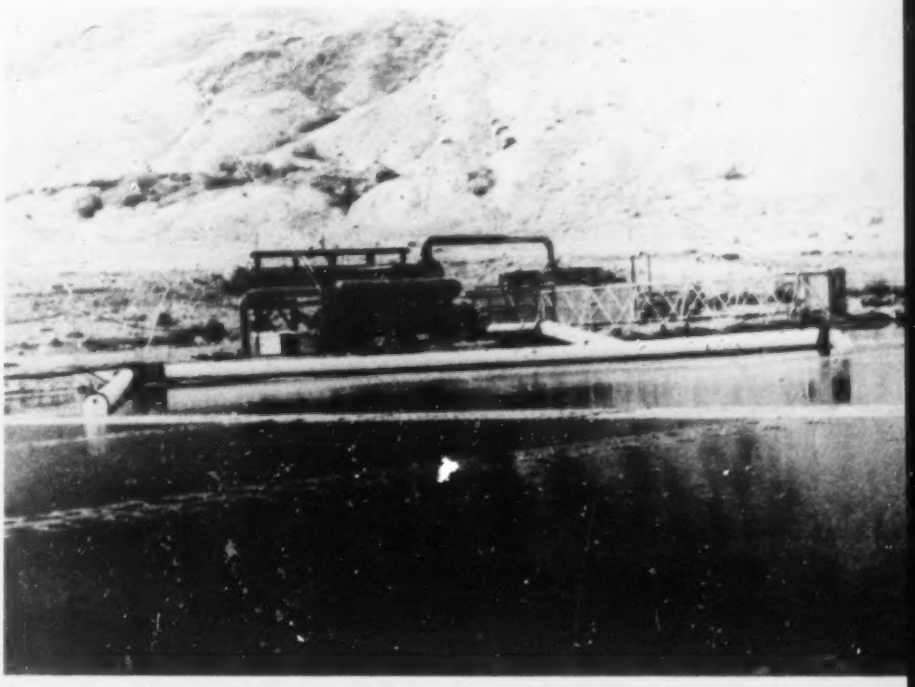
The government, finding that its loans had provided most of the capital, ultimately demanded an equity share in the company. As a result, the Israel Electric Corp. became a public power entity with more than 80 percent of the voting stock government-owned, and a continuing minority of private ownership. The government subsidized IEC to hold down electric rates.

IEC employees won the right to name one-third of the board of directors, a right they elected not to exercise after a brief trial. The employees did exercise a traditional right to receive free of charge the electricity delivered at their home meters.

The petroleum industry went through vertical divestiture, a dramatic change brought about by pragmatic need rather than social policy. In the mid-1950s three multinational oil corporations elected to withdraw from the Israeli market, thus severing Israel from the security of their vast economic power. Three new investor-owned companies stepped into some of the multinationals' roles, buying crude oil on world markets and distributing the refined products locally but staying out of refining. Affiliates of these three companies plus a fourth competitor distribute LPG bottled gas.

A new refining company (at first all government-owned, later co-owned with private investors) took over the Haifa refinery, then built and ran a second Mediterranean refinery at Ashdod, custom-refining crude oil on a cost-of-service basis. Separate government-owned companies and a private firm laid and operated various oil and product pipelines and distribution terminals. After nationalization of the Suez Canal in 1956 the Israelis built crude oil pipelines from the Red Sea port of Eilat to the Mediterranean Sea at Ashdod and Askelon, surmounting the closure of the Suez Canal to Israel-bound tankers.

Oil insecurity has challenged Israeli planners at least since Egypt's nationalization of the Suez Canal. Egyptian attempts to cut off the oil supply lifelines precipitated two wars (the 1956 Sinai campaign and the 1967 Six-Day War). Israel's government established a long-term program of strategic petroleum stockpiling, to protect against severe emergencies. Israel does not publish the amount of oil in its strategic stockpile, but knowledgeable observers generally believe it amounts to some months' worth of crude oil demand. Israel has maintained self-sufficiency in refining capacity.



One answer to the energy crisis in Israel is this solar pond by the Dead Sea, which can channel energy from the sun to run a 150-kw power plant.

Goals of Energy Policy

Both conventional economics and issues of national survival constrain Israeli energy decisions. The Ministry of Energy and Infrastructure has expressed five main targets:

- supply energy at prices which the country can afford;
- obtain energy from a variety of sources because of the political situation in the Middle East;
- diversify the types of energy, such as coal, nuclear, domestic oil and solar energy;
- design and implement an energy conservation program; and
- supply and exploit energy in environmentally acceptable ways.

The principal energy facilities are now dispersed along Israel's coast. (See map.) The Planning and Building Law allows the Cabinet to pass upon the siting of major new facilities.

Israel regulates the prices of all fuels and electricity. The government regulates rates and services of both big public power and little, investor-owned power. The latter is an Arab-run company (established by Jordan Arabs before the Six-Day War) that serves parts of Jerusalem and the West Bank, buys power at wholesale from the Israel Electric Corp. and is the object of a takeover effort.

Gasoline and other consumer fuels are priced uniformly throughout the country. An equalization fund compensates for cumulative changes in crude oil acquisition costs and for any marketer's unusually high costs, including service to remote filling stations. Gasoline, kerosene and fuel oil market shares are divided up with government approval. Stiff excise taxes make Israel's gasoline consumers pay prices among the highest in the world.

Utility Generation By Oil

The final energy consumption in 1979 was 17 percent in the form of elec-

tricity, 77 percent as petroleum products, 2 percent as solar hot water heating, 1 percent as natural gas and 2 percent as crude oil (consumed directly). All utility generation of electricity was in oil-fired plants, which account for well over a third of gross energy use.

homes (often with electrical backup). For many households solar energy collectors meant higher living standards, making hot water available for the first time. Numerous firms manufacture rooftop collectors. Last year, the government amended the building code to require solar hot water heat for new

ELECTRICITY STATISTICS OF THE ISRAEL ELECTRIC CORP.

	1979	1970	1960	1950
Customers at year-end (1,000s)	1,238	912	551	203
Year-end installed capacity (mw)	2,653	1,226	410	100
Annual peak load (mw)	2,070	1,115	420	110
Fuel consumption (1,000 metric tons)	2,816	1,666	636	193
Generation (10^6 kwh)	11,992	6,610	2,205	543
Total Sales (10^6 kwh)	10,636	5,697	1,857	464
Analysis of 1979 sales (10^6 kwh):				
Residential	2,846	(27%)		
Commercial	1,899	(18%)		
Agriculture	449	(4%)		
Water pumping	1,697	(16%)		
Industry	3,745	(35%)		
	10,636	(100%)		

Source: Government of Israel, Central Bureau of Statistics; STATISTICAL ABSTRACT OF ISRAEL, 1980 (No. 31)

Solar energy demonstration projects have gone further. One active solar project has successfully air conditioned a hospital complex. Another project supplies 150 kw of electricity for hotel use near the Dead Sea by drawing heat from a solar pond to run an organic-fluid turbine.

Israel has plans for larger-scale solar-pond generation. Biomass demonstrations include methane production from farm wastes. Use of solar energy increased by 226 percent from 1968 to 1978—a much greater increase than electricity (116 percent) or petroleum products (76 percent). Natural gas consumption declined during the decade.

Research and development projects include Beersheba University's investigation of liquid metal magnetohydrodynamics (MHD) generation, with a prototype now proposed linking liquid metal MHD to solar sources.

Coal Goal Set

Israel is committed to diversification of fuel sources. A new electric generating plant going on line this year with its first 350-mw unit (in Hadera, between Tel-Aviv and Haifa) will burn oil initially, but is designed to switch to imported coal upon completion of delayed transportation facilities. Plans for the Hadera plant ultimately include three additional coal-burning units. Its planners hope that the base-load coal units at Hadera will convert close to half the country's generation to coal in the 1980s.

Over the years, Israel has studied whether to construct a nuclear power plant at each current scale of its electric utility industry. Planning for new plants at new sites now involves a choice between coal or nuclear. Present consideration of a first nuclear power plant, to follow the Hadera coal plant, includes vendor discussions and environmental reviews. The next coal plant, after Hadera, will be located south of Tel Aviv, and will probably be scaled at 550 mw per unit.

Develop the Dead Sea Drop

Israel has approved in principle a unique hydroelectric project that would flow sea water from the Medi-

Installed electric generating capacity at the end of 1979 was 2,653 mw, divided among three base-load plants along the Mediterranean coast, plus combustion turbines. Service to 1,238,000 meters hit a peak load of 2,070 mw in 1979 with a generation of about 12 billion kwh and oil consumption of 2.8 million metric tons (nearly 20 million barrels).

With water pumping accounting for 16 percent of electrical use, Israel saves energy by coordinating national water carrier demand with management of system peaks. The pumps that lift water from the Sea of Galilee to ponds on adjacent mountain tops are cut back during peak periods, equivalent to a pumped storage system.

"Israel is much more oil-dependent than the United States is, using petroleum for almost all of its primary fuel needs, including electric generation."

residential building units.

For the residential/commercial sector, solar hot water heating provides 6 percent of final energy use; electricity provides 27 percent; and petroleum (LPG bottled gas, kerosene, and home heating oil) 66 percent. The foregoing omits the extensive use of passive solar concepts in orientation and design of buildings, a significant (but unmeasured) factor in space cooling and heating.

"The Israeli Electric Corp. became a public power entity with more than 80 percent of the voting stock government-owned."

Solar Used Widely

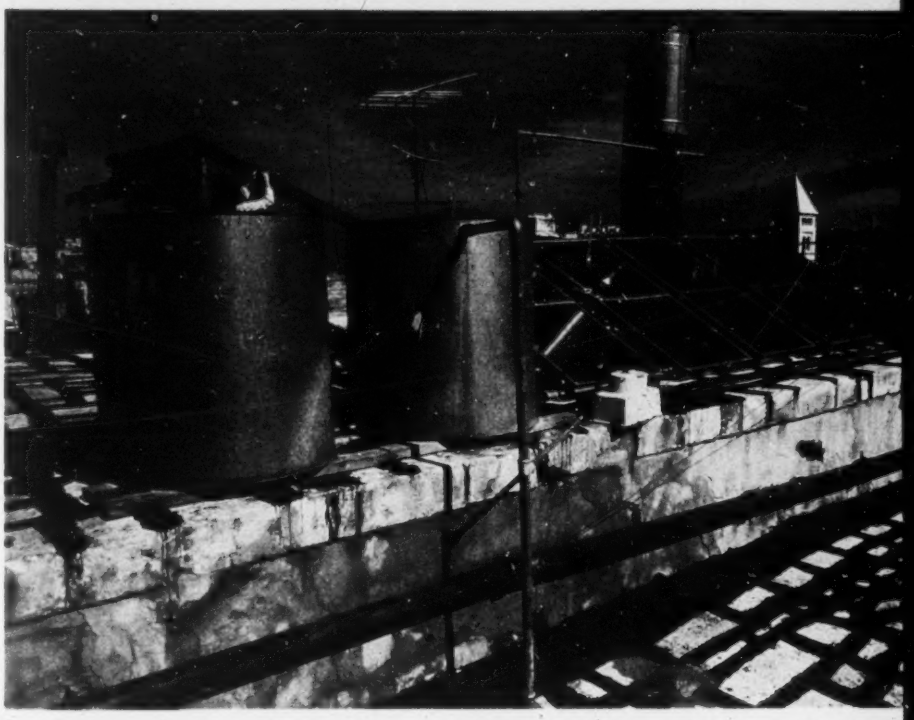
In energy-poor Israel, solar is the foremost indigenous energy supply. Solar energy plays a major role in hot water heating, supplying more than 200,000

In the industrial sector, Israel has long produced valuable potash, magnesium and other minerals from the vast Dead Sea works with extensive (but unmeasured) uses of passive solar.

"In energy-poor Israel, solar is the foremost indigenous energy supply."

terranean along a 65-mile canal and down a drop of 1,300 feet to the Dead Sea, the lowest point on the earth's surface. Feasibility studies will be made. Costs must be carefully evaluated, detailed planning undertaken, sites tested and several problems solved before the project could be realized. Benefits anticipated by proponents include 600 mw of hydro capacity, cooling water supplies for a nuclear or fossil plant, enhanced solar pond potentials, and maintenance of falling Dead Sea water levels.

Israel also has oil shale, low-grade peat and wind resources which may prove useful in time. Finally, Israel is interested in oil exploration abroad as well as at home.

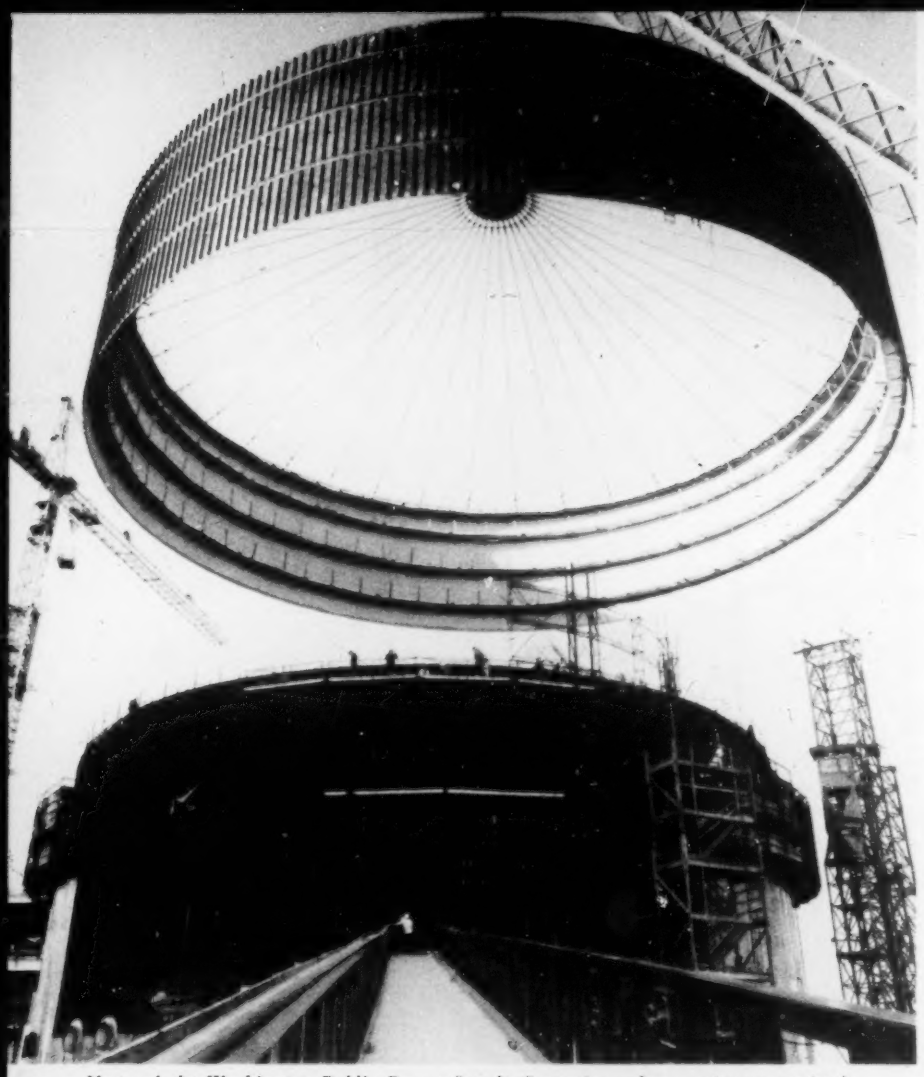


More than one-fourth of the Israeli buildings are equipped with solar heating or hot water systems. Photos by Jordan College, Cedar Springs, Mich.

Thanks to the ingenuity of both business and government, Israel has weathered demolition of an existing energy system and successfully adjusted to a constantly changing energy universe. The first challenge was simply to secure petroleum supplies. Now the added challenge is to tap economical alternative energy sources.

Past performance presages further ingenious responses by Israel's energy economy. Israelis, like Americans, have approached difficult situations optimistically, confident that solutions are possible. As the history of both countries demonstrates, the "can do" attitude is itself an important resource.

nuclear costs spiral above coal



None of the Washington Public Power Supply System's nuclear projects were in the Komanoff study as they have not been completed. Work on units 4 (above) and 5 has been slowed down. Photo by WPPSS

by CHARLES KOMANOFF

OVER THE LIFETIME OF NEW electric-generating plants, capital costs will account for approximately two-thirds of total generating costs for nuclear and one-third for coal plants. Accordingly, capital costs are central to the relative economics of new nuclear and coal plants.

The capital costs of the first nuclear plants completed on a commercial basis in the early 1970s were only slightly greater than those of contemporaneous coal plants, but costs for both plant types have increased rapidly since then. Although inflation in construction wages and material prices has been a major contributory factor, increased environmental and safety standards have played a particularly important role. Most representatives of the power industry, the federal government, and the technical and policy communities have argued that future environmental and safety standards will affect nuclear and coal plants equally and will not cause major differences in capital costs.

If these forecasts were accurate, new nuclear plants, which will cost less to operate than new coal units, would probably have slightly lower life-cycle generating costs. Such forecasts underlie the present plans of U.S. utilities to almost triple nuclear generating capacity by 1990 from the 54 gigawatts (gw) operating in early 1981, and they suggest that new orders will be forthcoming when the current surplus of generating capacity is used up.

The projections of nearly equal future nuclear and coal capital costs are, however, belied by experience: the average ratio of nuclear to coal capital costs of plants completed in the late 1970s, after adjustment to eliminate the effects of inflation and add the costs of sulfur dioxide scrubbers to coal plants, was more than 1.5 to 1. Moreover, the ratio increased steadily throughout the 1970s, and an examination of the impetus behind new regulatory standards suggests that the trend toward higher nuclear capital costs relative to coal will continue.

Editor's Note: Komanoff is a mathematical economist who predicted correctly in a 1976 study that generating performance of nuclear plants would fall far short of nuclear industry projections. Komanoff adapted this article for PUBLIC POWER *from the summary chapter of his recently published book,* POWER PLANT COST ESCALATION: NUCLEAR AND COAL CAPITAL COSTS, REGULATION AND ECONOMICS. *The 323-page book is available from Komanoff Energy Associates, 333 West End Ave., New York, N.Y. 10023 for $295.00.*

statistically to determine empirical cost trends.

Comparisons by Ownership

Of the 116 coal units studied (all of them completed between 1972 and 1977) 10 were built by state and local public power systems, eight by cooperatives, two by the Tennessee Valley Authority, the rest by investor-owned utilities. Capital costs of the public power segment (state and local utilities combined) averaged 6 percent lower than the norm for coal plants. The co-ops' capital costs were 7 percent more costly and the TVA plants were 8 percent more costly than the norm.

These findings control for differences in geographic region, use of scrubbers, chronology and multiple-unit construction. Thus the cost differences are not attributable to arbitrary differences among the samples. For example, the proportion of state and local systems with scrubbers was slightly less than for the coal-plant sample as a whole. All such differences have been statistically adjusted in calculating the results, which are averages. Within each category there was a fairly wide variation, with some units more costly and others less costly than the norm.

Regarding nuclear plants, there was no discernible difference between the costs of the five units constructed by state and local utilities and the rest of the nuclear plants. Similarly, there was no discernible deviation from the norm for the three reactors built by TVA.

Other Cost Factors

Other factors which significantly correlated with nuclear or coal capital costs were:

Unit Size: Nuclear per-kw costs declined 10 percent for each doubling in size—a cost reduction less than half that projected by the power industry and the federal government. Coal plant costs were not affected by unit size, notwithstanding prevailing estimates of 10-15 percent cost reductions per size doubling.

Multiple Units: Identical nuclear or coal units built consecutively at one site cost 10 percent less than other units, evidently because of shared planning and facilities as well as "learning" in design and construction.

Architect-Engineer Experience: Nuclear costs declined by 7 percent for each doubling in the number of plants constructed by an architect-engineer, a relatively modest "learning" effect.

Scrubbers: Systems for controlling sulfur dioxide added 26 percent to coal plant costs, or $120/kw (in 1979 steam-plant dollars).

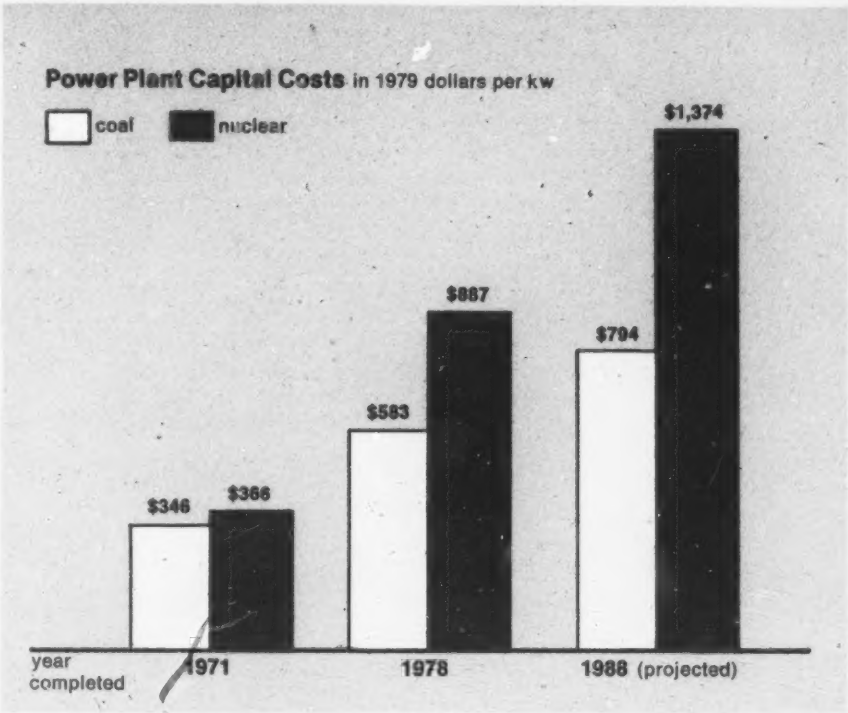
Geographical location: Nuclear and coal plants built in the Northeast were, respectively, 28 percent and 14 percent more costly than Midwestern plants. Southeastern and South Central coal plants were 20 percent and 24 percent cheaper, while Western coal plants were 26 percent more costly than Midwestern plants.

Despite lower wage rates, reactors built in the South cost no less than Midwestern nuclear plants.

Costs of standard plants: After controlling for each of the above factors, as well as inflation and interest costs, capital costs were found to have increased persistently throughout the period of the study. To measure the rates of increase, two sets of "standard plants" were defined, one representing those completed in late 1971, just prior to the start of the study period, and the second corresponding to the last plants in the sample, completed in late 1978. Their characteristics mirror the data base, except that geographical characteristics were merged to avoid regional bias. A scrubber was also specified for the 1978 standard coal plant (whereas about half of recent coal plants lack scrubbers, using low-sulfur coal instead to meet emission standards).

Costs were calculated for plants with these characteristics from the statistical trends described above. Approximately 6 to 10 percent of the costs are contributed by real interest during construction, which is proportional to plant construction time and the real cost of money for utilities (about 3 percent per year). Typical construction periods for 1971 and 1978 plants were calculated separately; they increased from four and one-half to five years for coal and from five and one-half to six and one-half years for nuclear.

Costs are expressed in 1979 steam-plant dollars and thus appear greater than costs of most completed plants since the latter are reported in mixed-current dollars which reflect earlier, cheaper material prices and wage rates. From 1971 to 1978, the capital cost of the standard nuclear plant increased by



"Average ratio of nuclear to coal capital costs of plants completed in the late 1970s, after adjustment for inflation and cost of scrubbers to coal plants, was 1.5 to 1."

Of the 116 coal units studied by Komanoff (all of them completed between 1972 and 1977) 10 were built by state and local public power systems. Three of the 10 were units of the Salt River Project's Navajo complex in Arizona, above. Capital costs of the public power segment averaged 6 percent lower than the industry norm for coal plants. Photo by Dravo Corp.

Past Cost Increases

Virtually all nuclear plants completed in the 1970s cost much more to construct than originally estimated by reactor manufacturers and electric utilities, even after adjusting for the effects of inflation. The failure to predict accurately nuclear capital costs reflects a fundamental limitation in the power industry's technique of engineering estimation, which employs conceptual plant designs to calculate the labor, materials, equipment and engineering effort needed to build a plant.

The technique requires that the scope of work be known at the start of construction, yet nuclear plants, as the largest reactor builder (Bechtel Power Corp.) has noted, are subject to "new requirements . . . imposed after the design and construction are well advanced, requiring substantial rework that increases both schedule and cost." The 1979 nuclear accident at Three Mile Island (TMI), moreover, has provoked a thorough and still-continuing reappraisal of nuclear regulation that promises to produce many new, more stringent standards.

No comprehensive empirical study of nuclear capital costs has been published by the power industry. To measure past increases in capital costs, a cost data base was compiled for all U.S. nuclear and coal units greater than 100-mw capacity that achieved commercial operation from Dec. 31, 1971 to Dec. 31, 1977 (for coal) and to Dec. 31, 1978 (for nuclear). It includes all reactors constructed on a commercial basis through the end of 1978: 46 units totaling 39,265-mw capacity, ranging from 514 mw to 1130 mw each. The 116 coal units total 70,509 mw, ranging in size from 114 mw to 1,300 mw.

Capital cost data were obtained from utility records published by the federal Energy Information Administration. Costs are expressed there in "mixed current dollars," *i.e.*, as the sum of all dollars expended in the different years of construction, including interest during construction (IDC) paid by the utility on capital borrowed during construction. To control for widely varying rates of inflation and interest during the sample period, costs were converted to 1979 dollars without IDC, using the Handy-Whitman Index of Public Utility Construction Costs, a semi-annual compilation of wages, material prices, and other factor costs in steam-electric plant construction. These adjusted costs, in 1979 "steam-plant" dollars, were then examined

142 percent (13.5 percent annually) or $520/kw in 1979 steam-plant dollars. For coal plants, the typical 1971-78 real increase was 68 percent (7.7 percent annually), or approximately $240/kw, of which scrubbers accounted for half.

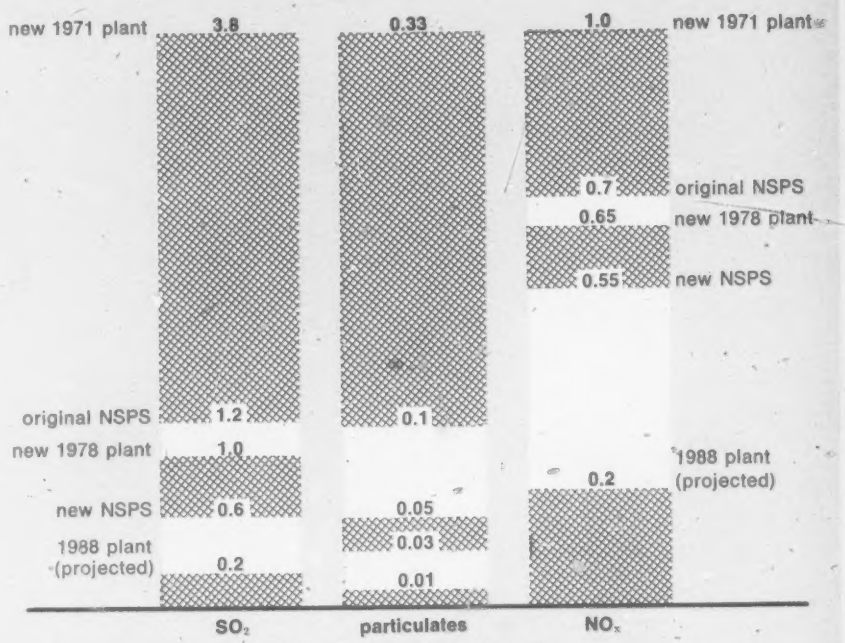
Thus, the ratio of typical nuclear to coal capital costs increased from 1.06 in 1971 to 1.52 in 1978, assuming the addition of scrubbers to 1978 coal plants; without scrubbers, the 1978 ratio was 1.91. These cost ratios far exceed the highest nuclear-coal capital cost ratio projected by industry and government for future plants. It indicates that recently completed nuclear plants may not show life-cycle cost advantages over comparable coal facilities.

Past Regulations and Costs

Because the cost increase figures above are in addition to wage and material inflation, they had to result from increases in the *quantity* of labor, materials, equipment and engineering required to build power plants. In turn, these increases were occasioned almost entirely by the application of more stringent environmental and safety standards to coal and nuclear plants.

Emissions of Criteria Air Pollutants by Typical New Coal Plants

(pounds of pollutant per million Btu of coal burned)



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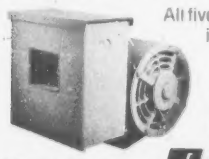

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Coal: Most of the real (inflation-adjusted) increase in the cost to construct coal plants in the 1970s went for equipment to control the three major air pollutants produced in coal combustion: particulates, sulfur dioxide and nitrogen oxides. The collection efficiencies of electrostatic precipitators were improved from the former 97 percent average to 99.5 percent to enable them to capture smaller particulates, adding an average of $40/kw to capital costs.

Installation of "first-generation" scrubbers that remove an average of 75 percent of sulfur dioxide from the stack added an average of $120/kw, and boiler modifications reducing nitrogen oxide emissions by 35 percent added about $10/kw. In return for these expenditures, the typical 1978-completed coal plant produces 64 percent less "criteria pollutants" than a typical 1971 plant—surpassing the average 55 percent reduction required by the original New Source Performance Standards (NSPS) promulgated by the federal Environmental Protection Agency. The new coal plants are slightly cleaner than typical oil-burning plants.

Other environmental improvements—better emission monitoring, safer disposal of waste ash, increased use of cooling towers, and abatement of construction pollution, liquid effluent and noise--cost an average of $45/kw. All told, new equipment to reduce the environmental impact of coal plants absorbed 90 percent of the total increase in the real capital costs of coal plants during the 1970s.

Nuclear: The costs of increased regulatory standards cannot be itemized for nuclear plants as they were for coal. Changes in nuclear design or equipment requirements tend to cause indirect, site-specific changes in diverse supporting equipment that are hard to identify and even more difficult to quantify. But although cost estimates are not available for each specific change, nuclear design and construction changes in the 1970s were nevertheless extensive and costly.

One key indicator of regulatory standards, the number of Atomic Energy Commission (AEC) and Nuclear Regulatory Commission (NRC) "regulatory guides" stipulating acceptable design and construction practices for reactor systems and equipment, grew almost seven-fold, from 21 at the end of 1971 to 143 at the end of 1978. Professional engineering societies developed new nuclear standards at an even faster rate (often in anticipation of AEC/NRC regulations). These led to more stringent (and costly) manufacturing, testing and performance criteria for structural materials such as concrete and steel, and for basic components such as valves, pumps and cables.

Requirements such as these had a profound effect on nuclear plants during the 1970s. Major structures were strengthened and pipe restraints added to absorb seismic shocks and other postulated "loads" identified in accident analyses. Barriers were installed and distances increased to prevent fires, flooding, and other "common-mode" accidents from incapacitating both primary and back-up groups of vital equipment.

Similar measures were taken to shield equipment from high-speed missile fragments that might be loosed from rotating machinery or from the pressure and fluid effects of possible pipe ruptures. Instrumentation, control and power systems were expanded to monitor more plant factors under a

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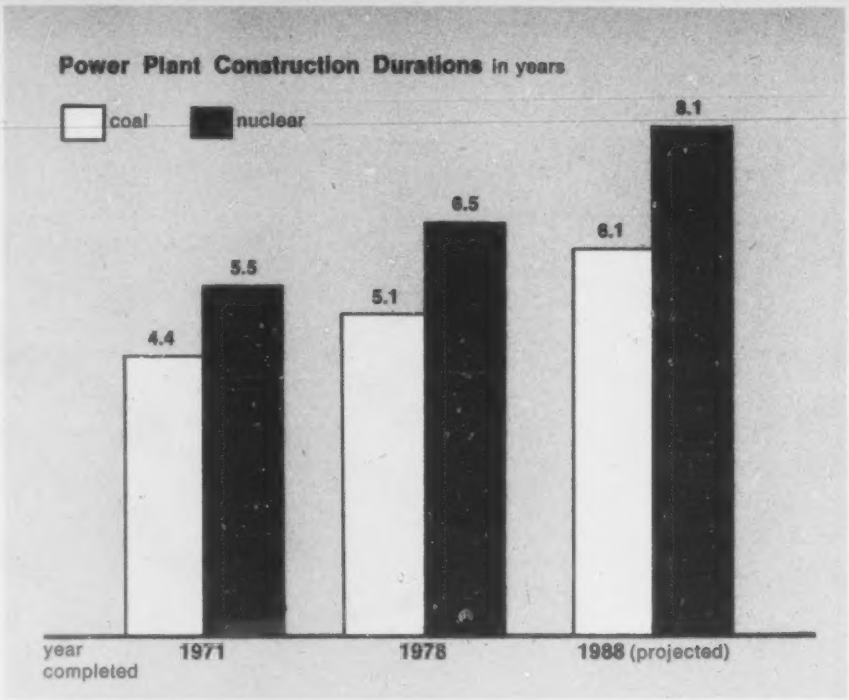
broadened range of operating situations and to improve the reliability of safety systems. Components deemed important to safety were "qualified" to perform under more demanding conditions, requiring more rigorous fabrication, testing and documentation of their manufacturing history.

Over the course of the 1970s, these changes approximately doubled the amounts of materials, equipment and labor and tripled the design engineering effort required per unit of nuclear capacity, according to the Atomic Industrial Forum. They also increased the real costs of many construction commodities. Moreover, because many changes were mandated *during* construction—as new information relevant to safety emerged—much construction lacked a fixed scope and had to be let under cost-plus contracts that undercut efforts to economize.

Completed work was sometimes modified or removed, often with a "ripple effect" on related systems. Construction sequences were frequently altered and schedules for equipment delivery were upset, contributing to poor labor productivity and hampering management efforts to improve construction efficiency. In general, reactors in the 1970s were built increasingly in an "environment of constant change" that precluded control or even estimation of costs and which magnified the direct cost impacts of new regulations and design changes.



Impetus Behind New Regulations

The major force, then, behind the real increase in power plant costs in the 1970s was the imposition of increasingly stringent regulatory requirements. The same will be true for the future. Thus if we can anticipate future regulatory trends we can gain substantial insight into the probable future course of power plant costs.

This is a fairly straightforward matter for coal: most new environmental regulations are reasonably predictable, and, since they affect specific plant systems, their costs are roughly quantifiable. Nuclear plants, however, present a major difficulty: many safety requirements that will affect future reactors have not yet been promulgated—indeed, some will be occasioned by problems identified during future operating experience. Moreover, even the costs of those future requirements known today are not calculable on a generic basis since they frequently affect so many internal plant systems that their impact will vary both with plant design and the stage of construction.

But, even if specific future nuclear regulatory standards and their costs cannot be determined in advance, prior experience may nevertheless provide a means of approximating their overall rate of application. Increased regulatory stringency appears to be closely related to expansion of the "nuclear sector"—the amount of nuclear capacity operating and under construction—and to increased reactor operating experience.

This conclusion is suggested by the remarkably high (92 percent) "goodness of fit" (agreement between predicted and actual costs) attained when increases in nuclear costs in the 1970s are correlated with increases in nuclear sector size. It is also supported by historical analysis of growth in nuclear regulations.

One factor motivating this growth has been regulators' desire to reduce the risks per reactor as the number of plants increases. As nuclear pioneer and proponent Alvin Weinberg wrote following the Three Mile Island accident in 1979, "for nuclear energy to grow in usefulness, the accident probability *per reactor* will simply have to diminish." Otherwise, nuclear expansion could lead to such a high rate of accidents per year that the public's confidence in nuclear power would collapse and plants would be forced to close.

Weinberg's prescription has many antecedents. Similarly, AEC staff, in recommending backup shutdown systems to prevent events in which the control rods fail to "scram" (shut down) the reactor during an accident (events known as Anticipated Transients Without Scram, or, ATWS), wrote in 1973:

"The present likelihood of a severe ATWS event is . . . acceptably small, *in view of the limited number of plants now in operation . . . As more plants are built, however, the overall chance of ATWS will increase,* and the staff believes that design improvements are appropriate to maintain and to improve further the safety margins provided for the protection of the public."

Experience Revealed Defects

A second factor contributing to new regulations is the public's increasing awareness of and concern about nuclear hazards. This has put pressure on elected officials and regulators to reduce nuclear risks in order to make nuclear expansion more acceptable to the public.

Citizen interventions and protests have been blamed for increasing costs through delay, but most such increases were negligible in real (inflation-adjusted) terms for reactors completed in the 1970s; delays caused by citizen challenges generally affected reactor *licensing,* not construction, and reactors which took longer to license did not have inordinately high capital costs.

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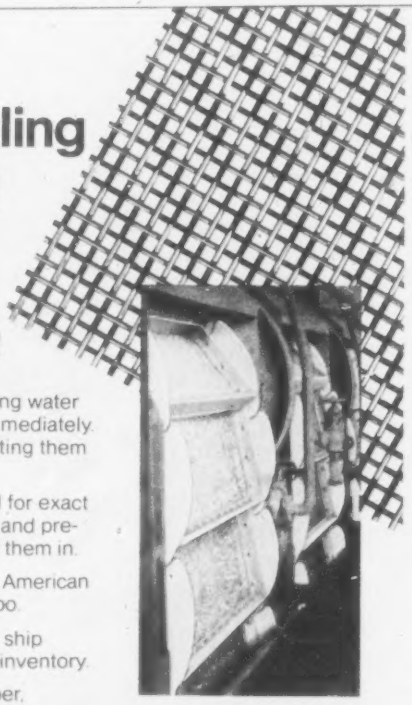

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Far more importantly, intervenors and expert critics have identified new safety concerns, such as emergency cooling criteria and cable separation, and have generally made the regulatory staff considerably more cautious and conservative in licensing and rulemaking hearings and in internal formulation of regulatory policy.

New regulations also arise from detection of previously unrecognized reactor defects. Reviews of new plants by the reactor manufacturers and AEC/NRC have provided one such means of detection. For example, General Electric and Westinghouse discovered potentially large dynamic forces that could affect reactor containment structures and reactor vessel supports, respectively, in accident analyses performed for licensing reviews of new plants in the mid-1970s.

Other safety issues leading to new regulatory standards, including seismic and tornado protection, quality assurance problems, main steamline breaks, and intermingling of systems for reactor operation and shutdown, have been identified in reviewing individual reactor applications and have been applied subsequently to other plants.

Even more importantly, many unanticipated safety problems have been revealed by operating experience. Contrary to early expectations, increased reactor operation has generally warranted widening rather than reducing design margins.

Major recent examples are the 1975 Browns Ferry fire, which led to costly new rules for fireproof construction and ventilation; reactor control breakdowns in 1978-80 due to power failures to instruments that have prompted consideration of increased separation of "safety" from "non-safety" instruments; and the 1979 TMI accident, which has sparked an across-the-board review of fundamental regulatory premises.

The origins of nuclear regulatory standards are varied and complex, but the above discussion suggests that nuclear capacity growth and increased reactor operating experience have been the major causes of new requirements. Growth in the number of plants has engendered greater public concern over nuclear power hazards, has generated new licensing reviews in which safety problems were discovered and has forced regulators to endeavor to reduce per-plant risks to contain the industry-wide probability of a serious accident.

Increased operating experience, sim-

ilarly, has unearthed safety defects requiring remedial regulatory action. In addition, the enlarged regulatory effort required to oversee an expanding nuclear sector has necessitated greater documentation and standardization of regulatory requirements, generally at a more stringent level.

Growth in size of the sector also underlay the rise in real costs of coal plants. Expansion of coal-fired generating capacity in the 1960s and 1970s aggravated that sector's environmental

"Contrary to early expectation, increased reactor operation has generally warranted widening rather than reducing design margins."

impact, both nationwide and in new regions previously without large-scale coal use, such as the Four Corners region in the Southwest. Public outcry over these potential impacts led to more stringent and costly pollution control requirements. Similarly, concern over acid rain, which is also a product of expanded electricity generation from coal (although disproportionately from earlier, poorly controlled plants), may cause coal emission control requirements to be tightened further.

Future Regulations and Costs

The preceding discussion indicates that the real capital costs of new nuclear and coal plants will increase further (in addition to increases caused by general inflation) as regulatory standards become still more stringent in the future. New standards and their costs for typical plants assumed to be completed in 1988 are outlined below.

Coal Standards and costs: EPA has promulgated stricter New Source Performance Standards for coal plants ordered after September 1978. But for purposes of estimating 1988 coal plant costs here, future emission rates have been geared to emerging control technology and assumed to be approximately two-thirds less than those specified by the new NSPS.

This implies a 76 percent emission reduction compared to plants completed in 1978, and 91 percent compared to 1971 plants. This striking improvement—to a level cleaner than existing plants burning low-sulfur oil—would enable utilities to significantly expand coal-generated electricity without exacerbating acid rain and most other emission-related effects of burning coal.

Obtaining these and other pollutant reductions is likely to add between $120/kw and $230/kw (in 1979 steam-plant dollars) to the costs of 1978 coal plants. Most of the increase will go for nitrogen oxide control devices and improved solid waste disposal methods, since upgrading particulate and sulfur dioxide removal will probably cost less than past (1971-78) improvements. Baghouse filters appear capable of capturing 99.9 percent of particulate emissions for only 10 percent to 30 percent higher cost than typical 99.5 percent-efficient sulfur dioxide scrubbers producing saleable wastes (sulfur, gypsum, or sulfuric acid) should cost only 15 percent to 50 percent more than current 75 percent-efficient waste-generating scrubbers.

The average estimated incremental cost of these measures for 1988 coal plants is $175/kw above the cost of a 1978 plant with scrubbers. A $210/kw increase—about the same as the 1971-78 cost rise—is assumed here to allow: (1) $15/kw for possible problems with new control devices or for currently unanticipated minor standards; (2) $10/kw for the increased real cost of interest during construction anticipated as coal construction durations grow from five years (1978 average) to six years for 1988 plants; and (3) $10/kw for investments to improve plant operating reliability.

"Future reactors will have to institute a myriad of new safety measures not reflected in the approximately $900/kw average cost of plants completed in 1978."

Nuclear Standards: Future reactors will have to institute a myriad of new safety measures not reflected in the approximately $900/kw average cost of plants completed in 1978—a figure that already exceeds the $800/kw projected cost of 1988 coal plants (both figures in 1979 steam-plant dollars). They will first have to make extensive design changes and equipment upgradings already promulgated but not incorporated in most 1978 units.

These include greater physical separation of redundant safety-related equipment such as electrical cables; more durable electrical components and wide-range instrumentation designed to function under accident conditions of high temperature; humidity, pressure, and radiation; and improved quality assurance programs to reduce design and construction defects such as seismic deficiencies found belatedly in many operating reactors during 1979-80.

Further requirements will result from NRC's efforts to correct the 17 unresolved safety issues—"matters affecting a number of nuclear power plants that pose important questions concerning the adequacy of existing safety requirements for which a final resolution has not yet been developed . . ." Many of these issues involve fundamental design considerations.

For example, asymmetric blowdown loads might require modifying pressurized water reactors to prevent postulated ruptures in reactor coolant pipes from overstressing reactor vessel supports, a condition that could damage both normal and emergency cooling systems while impeding insertion of control rods to stop nuclear fissioning. Another unresolved issue, systems interactions, might require segregating all components and circuits of certain safety systems in costly "bunkered" housings to avert inter-system interferences that could degrade performance of vital equipment.

"Future emission rates geared to emerging control technology . . . would enable utilities to significantly expand coal-generated electricity without exacerbating acid rain and most other emission-related effects of burning coal."

Moreover, NRC's list of unresolved safety issues is growing, not shrinking, fed by new licensing reviews and the growing inventory of operating experience—experience that will more than triple by 1988 if utilities realize their current expansion plans. Past practice indicates that these issues will be addressed incrementally, thwarting "licensing stabilization" and frustrating efforts to optimize design and construction. High costs and declining growth in electricity sales may force

"If the past relationship between nuclear sector size and costs continues in the 1980s, the capital costs of reactors now starting construction would exceed those of new coal plants with advanced pollution controls by about 75 percent."

some utilities to extend construction schedules to conserve cash and preserve credit ratings. Although the effects of stretch-outs are usually expressed in current dollars, and, thus, appear inflated, they do increase real interest costs, disrupt construction logistics, and expose plants to additional regulatory requirements.

TMI Aftermath Continues

Finally, the TMI accident is leading NRC to expand its licensing process to make "explicit consideration of accidents involving severely damaged or molten cores." Among the many changes already ordered or being considered are upgrading the "single-failure criterion" so that some safety equipment must function despite multiple equipment failures; providing capability to cool "degraded" reactor cores; strengthening reactor containments to mitigate previously "incredible" core-melt accidents; expanding the "safety-related" classification of equipment subject to exacting quality assurance requirements; and requiring each reactor to install training simulators and no less than three heavily instrumented facilities for accident management (for technical support, operational support, and emergency coordination).

Each proposal has the potential to change plant designs significantly and to impose large costs and delays. Indeed, the pending rulemaking on degraded cores alone may take three years to complete and add 40 regulatory guides to the approximately 150 now in effect.

Estimating Future Nuclear Costs

The additional costs of nuclear regulatory standards for future plants cannot be estimated directly. Not only do nuclear design changes tend to "ripple" differently through reactor systems at different plants, but also many prospective standards have not yet been promulgated (most stemming from the Three Mile Island accident will not be determined for several years). The alternative used here is to estimate future nuclear costs by assuming that the expansion of nuclear capacity now in progress will have the same proportional effect on reactor capital costs as in the 1970s. That is, other things being equal, a doubling of nuclear capacity operating or under construction will lead to an approximately 50 percent rise in real reactor capital costs, as occurred in the 1970s.

This "sector-size hypothesis" is based on the historical relationships observed among growth in the nuclear sector, increases in regulatory stringency and increases in nuclear costs. It is advanced here not as a means of projecting future nuclear costs precisely, but as an alternative to engineering-based estimates that are invariably overrun by ever-changing regulatory and design criteria. Linking costs to nuclear sector size is also superior to relating costs only to the passage of time, since it more closely reflects the

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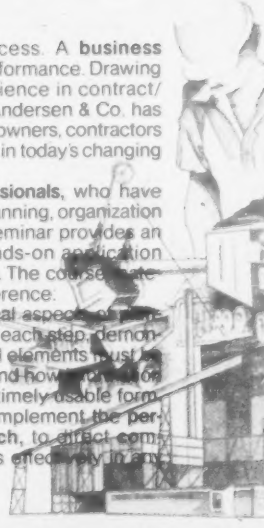

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underlying forces which add to reactor regulations and costs.

This approach results in a calculated cost for reactors completed in 1980 of approximately $1,400/kw (in 1979 steam-plant dollars), 55 percent above the actual cost of a typical 1978 reactor. This cost includes real interest during construction.

Given the $800/kw cost projected for 1988 coal plants, the ratio between typical 1988 nuclear and coal capital costs would be 1.73. The 73 percent cost differential, although triple that in most forecasts, represents an increase of only 21 percentage points from the 52 percent differential for 1978 plants. It is also less than the estimates yielded by alternative statistical projections: If the 1971-78 annual rates of increase in real costs were extrapolated to 1988, the resulting costs would be $3,140/kw for nuclear and $1,230/kw for coal (in 1979 steam-plant dollars)—a 2.6 nuclear-coal ratio with over three times the cost differential projected here.

Coal Costs Rise Slower

Projections that electricity will be cheaper from new nuclear plants than from new coal facilities require that respective capital costs not differ by more than approximately 25 percent. However, nuclear capital costs increased more than twice as much as those of coal plants during 1971-78 and already exceed the latter by 50 percent. In return for increased costs, emissions of criteria air pollutants from new coal plants declined by almost two-thirds, compared to 1971 plants, and could fall by nine-tenths by the late 1980s to levels lower than those from plants burning low-sulfur oil. The far more costly attempts to contain nuclear hazards have produced largely putative, intangible reductions in accident probabilities, reductions whose significance seems questionable in light of the 1979 accident at Three Mile Island—then America's newest reactor.

Efforts to reduce the risks of nuclear power plants grew apace with expansion of the nuclear sector and were the key ingredient in causing nuclear capital costs to rise in real terms in the 1970s. If the past relationship between nuclear sector size and costs continues in the 1980s, the capital costs of reactors now starting construction would exceed those of new coal plants with advanced pollution controls by about 75 percent. The generating costs of new reactors would then average 20 percent to 25 percent more than those of new coal plants, even assuming that the capacity factors of large nuclear plants improve to 60 percent from their 54 percent historical average, and that the delivered cost of coal continues to increase significantly faster than inflation, to reduce coal-mining's safety, health and environmental costs.

These figures imply that a typical new nuclear plant with 30 percent of its capital cost paid off would not be a cheaper source of electricity than a new full-cost coal-fired plant. Accordingly, many reactors in early stages of construction appear to be potential candidates for economical replacement by coal facilities. Cancellation charges would add to the cost of abandoning nuclear projects, but they would be partially offset if some preparatory work at reactor sites, such as excavation and foundations, could be useful to replacement coal plants.

The conclusion that clean coal plants can provide electricity more cheaply than nuclear plants is at variance with current dogma, but it is rooted firmly in empirical cost data, and requires only a modest extension of established regulatory and cost trends. It is incumbent upon nuclear proponents to either demonstrate why their own cost projections should be heeded in light of the evidence presented here, or to acknowledge that construction of new reactors cannot be justified on the basis of economic comparison with coal.

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